

# Sustainability

<b>Lesson 1: Product packaging</b>	<b>KS or Year Group: Year 8</b>
<b>Resources:</b> <ol style="list-style-type: none"><li>1. Resource 1 – Easter egg</li><li>2. Resource 2 – ‘For’ factsheet</li><li>3. Resource 3 – ‘Against’ factsheet</li></ol>	<b>Outcomes:</b> <ul style="list-style-type: none"><li>• Students assess the different amounts of packaging used by the major supermarkets</li><li>• Students are able to do their own research on the packaging issue</li><li>• Students are able to advocate both sides of the debate on packaging</li></ul>

## National Curriculum

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Key concepts: 1.2c

Key processes: 2.1a, 2.1b, 2.2a, 2.2b, 2.2c, 2.3a, 2.3b, 2.2c

Range and content: 3e

Curriculum opportunities: 4a, 4g

## Lesson 1

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This series of two lessons looks at the environmental consequences of buying over-packaged products. Particularly focusing on the packaging of food products by the major supermarkets, the lesson will ask students to advocate arguments ‘for’ and ‘against’ packaging in a group debate. A neutral observer will be asked to judge the effectiveness of the arguments they have heard.

## Starter

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- Show/project **Resource 1 – Easter egg**. Ask the students to identify the three different types of packaging used here (the answers are foil, plastic and cardboard).
- Next ask the students to think of all the reasons why the egg is packaged in this way. Expect such answers as ‘to make it look attractive’, ‘to protect the egg’ or ‘to keep it fresh’, etc. Put the answers up on the board.
- Introduce the concept of ‘over-packaging’. Explain that there are practical reasons for packaging and identify these amongst the students’ answers (e.g. ‘to keep it fresh’). However, many products use much more packaging than necessary for practical reasons.

## Product packaging

- Ask the students to identify the over-packaging in the picture. For example, the individual plastic wrapping for the smaller eggs, the cardboard box inside the plastic packaging, etc.
- Explain that this lesson is going to focus on the over-packaging of food products, but the same points apply to all kinds of different products as well.

## Main activity

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### Activity 1:

- Divide the class into groups of five. Give one pair from each group a copy of **Resource 2 – ‘For’ factsheet**. Give the other pair copies of **Resource 3 – ‘Against’ factsheet**.
- The fifth member of each group should play an ‘average shopper’ with no particularly strong opinions either way (the teacher should probably try to spot and nominate the student in the group who is in fact the most neutral) .
- The two opposing pairs should read their respective factsheets and briefly prepare for the debate. Once they are ready, start a debate in which they should try to persuade the ‘average shopper’ of their viewpoint. The ‘average shopper’ should be allowed to ask questions of each side, although not express opinions.
- Once the debate has been brought to a close, the fifth member should say which side he/she found most convincing and why.
- The results of each debate should be announced to the whole class. Which argument generally prevailed amongst the whole class – ‘for’ or ‘against’?

### Activity 2:

- The teacher should explain that this second activity is a logo design competition. Split students into groups of three or four.
- Give each group a few pieces of A4 paper. Ask the students to design a simple image that sums up ‘over-packaging’ (e.g. a bin overflowing with packaging waste). The teacher should give suggestions that help each group refine their ideas in subsequent sheets.
- When they are finished, stick each design to the board or a wall. Ask students to vote for their favourite (with strict instructions that they cannot vote for their own!) . The design with the most votes wins.
- Explain that this logo will be used in the next lesson. For the next lesson, the teacher will need to reduce the logo with a scanner/photocopy and print out plenty of copies.

## Plenary

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Ask the students to select the three most important points that support both the ‘for’ and ‘against’ arguments about over-packaging. Each point should be illustrated with a specific example.

## Product packaging

### **Homework**

Ask the students to see if they can find a local or regional environmental group on the web. Is over-packaging mentioned as one of its concerns? If it is mentioned, are there any particular local issues that it raises that can be fed back and discussed in class? If it is not mentioned, perhaps students could email the organisers with a summary of the learning that has taken place in these lessons.

### **TEACHER'S NOTE:**

In the days prior to the second lesson, you will need to collect a couple of bin bags full of food packaging. You could ask a small group of fellow teachers to bring in items from home and/or you could set up a special disposal system in the staffroom for food packaging waste. Be careful, however, to ensure that the packaging comes from a good range of products, has been cleaned of food remnants and includes all the separate parts of the packaging (i.e. as it was bought in the shop).

### **Summary of learning**

- Students learn key ideas about packaging
- Students develop a symbol to represent packaging waste

**Resource 1 – Easter egg**



### Resource 2 – Arguments against packaging

- The USA, the world's biggest polluter, produces 32 billion kilograms of plastic food packaging every year. Packaging represents 50% to 80% of all litter, which has large social, economic and environmental costs.
- Manufacturers' main incentive for over-packaging their goods is branding and marketing. Many consumers have grown used to this over-packaging and, particularly in the case of supermarket fruit and veg, actually prefer to buy the more heavily packaged items. These items are often mistakenly perceived to be 'cleaner' than the unpackaged ones.
- Research shows that packaging for health and beauty products can cost three times as much to make as the contents. The study found that the contents of each bottle of Lynx gel cost Lynx just 10p to manufacture whereas the bottle itself cost 30p (the product retails for around £2). A cosmetics industry expert who carried out the research said: 'It is a perfect example of how we are over-packaging simple products and creating pointless landfill'.
- In order to get a clear picture of the impact of plastic, glass, aluminium and other packaging materials, you also need to add on the materials' ecological rucksack or 'overburden' – the hidden waste that the consumer never sees. Essentially, this factors in the earth ore, rubble and other waste generated in the extraction and processing operations. In the case of aluminium cans, for example, one is required to take into account all the energy used from turning the raw material into the product, including the extraction of alumina from the ground. In real terms, this means the actual waste caused by packaging in the UK more than doubles to a figure nearer 10 million tonnes a year.
- In the UK, the costs of packaging adds around £480 a year to the average food bill.
- An average family collected their packaging waste for a month and found that the total weight collected was 20kg. This translates into an energy equivalent of 197KWH or 821 days of light bulb usage.
- Ireland's levy on plastic bags has been credited with reducing plastic bag use by 90 per cent (in a world that uses 750 billion oil-derived carrier bags each year).
- Legislation, however, is not always effective. Under an EU directive passed in 1999, local authorities have been able to prosecute companies that over-package their goods. However, only four firms have been successfully prosecuted under current legislation. The Local Government Association (LGA) says that the rules have too many loopholes to be effective and the maximum fine of £5,000 does not pose any real deterrent for large companies. There is no incentive for manufacturers to cut down on packaging because they know they can get away with it. Office World, one of the companies successfully prosecuted under the regulations, was fined £2,000 for using boxes up to 14 times bigger than the items they contained.

### Resource 3 – Argument for packaging

- Packaging provides a variety of types of protection that may be necessary according to the product: physical protection (from shock, vibration, compression, temperature, etc); barrier protection (from oxygen, water vapour, dust, etc) in order to keep them clean, fresh and safe; containment (small objects are typically grouped together in one package for reasons of efficiency); information transmission (labels or leaflets that communicate how to use, transport, recycle or dispose of the product) and security (to enable authentication or prevent tampering) and portion control (to divide the product into amounts according to individual usage) .
- The Industry Council for Packaging and the Environment (INCPEN) says that under-packaging is ten times worse than over-packaging. Reducing packaging is important, but having sufficient packaging is necessary to prevent food waste which is a much bigger problem. They argue that 'if we didn't have packaging, landfills would be a great deal fuller with damaged goods and spoilt food'.
- Manufacturers also play the 'global good' card: 'It makes perishable products more available in the hot, humid climate of the developing world and dramatically improves the diets of the people who live there'.
- The packaging industry has begun to rise to the challenge of being responsible and innovative – glass containers are on average 30% lighter than in 1980, the weight of cans has fallen by a similar figure in the last 20 years and carrier bags are 45% lighter than in 1990.
- Social change has also, to a certain extent, dictated changes in packaging expectations. The growth in single-person households means demand for smaller, more convenient portions has grown. Similarly, as more women now work outside the home than 20 years ago, demand for food that is easier and quicker to prepare and cook has risen. We also live in a 'convenience culture', in which half of us now claim to eat 'on-the-go'.
- Manufacturers have a commercial interest in minimising packaging to reduce costs (although, as with any industry, there are occasional incidents of bad practice).
- Packaging, manufacturers contend, is the 'skin of commerce'. It protects at least 10 times its own weight of goods and around 63 per cent of our packaging waste is now recovered and recycled.
- Packaging attracts a lot of media attention, disproportionately so given its relatively small environmental impact. For example, packaging uses only a fraction of the energy that is expended in driving a car. Just 3% of a household's annual energy use is taken up by packaging.