

Packaging

Before you Begin

“Packaging” is “material” used to wrap or protect goods. Packaging as a technology is used for enclosing or protecting products for distribution, storage, sale, and use. Packaging is used in different industries including aerospace, beverages, chemicals, hospital, pharmaceuticals, food, to name a few.

Packaging is also used as a means to provide information (contents of packaging, ingredients, quantity, date of manufacture and expiry and cost of product to name a few) to consumers.

Packaging comes in different forms, in different sizes and uses different types of materials depending on the items or the products they are protecting. Packaging can be for a product as small as a tissue wrap for a burger or as large as a shipping container.

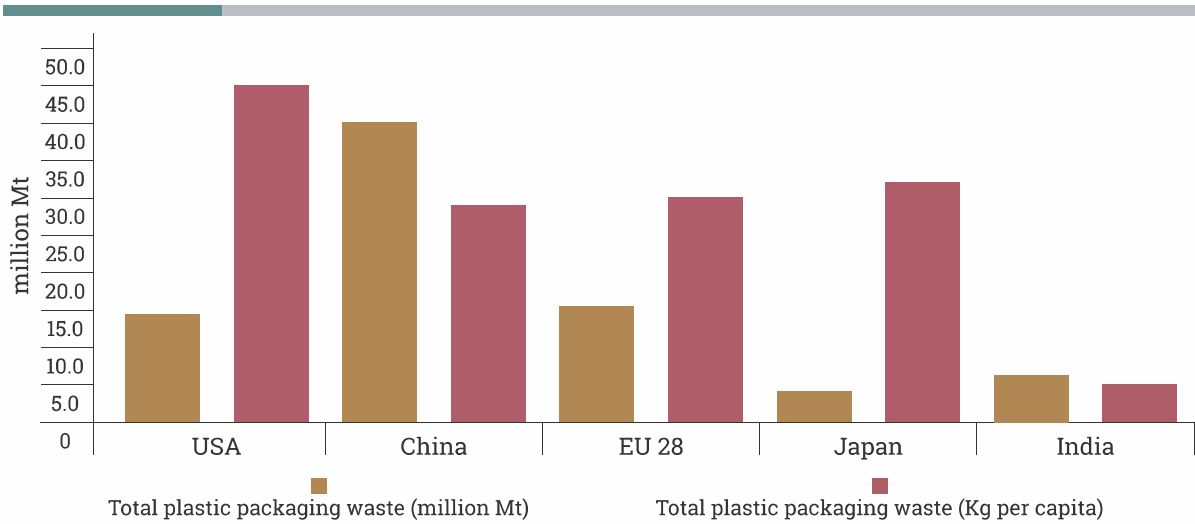
There are a number of benefits to packaging, some of these include

- barrier protection - packaging material serves as a barrier and protects the product from factors like dust, water, and other contamination.
- physical protection - is to protect the packaged product from dropping, shock, extreme temperature and vibrations to name a few.
- convenience - in terms of distribution, handling, stacking, opening and closing, reuse, recycling, etc.
- security - to increase safety in terms of tampering, theft, etc.
- sustainability - returnable and reusable packaging could be used a number of times prior to recycling.

As per Eurostat website, in Europe during 2015, 166.3 kg of packaging waste was generated per inhabitant in the EU (varying from 51.2 kg per inhabitant in Croatia and 222.2 kg per inhabitant in Germany). From 2006 to 2015, paper and cardboard was the main packaging waste material in the EU (34.8 million tonnes in 2015) followed by plastic and glass (15.9 and 15.8 million tonnes respectively).

As per UNEP, The single use packaging is one the biggest environmental challenge. Plastic packaging is mostly single-use, especially in business-to-consumer product, and a majority of it is discarded the same year it is produced. Nearly 50 percent of the plastic waste generated globally in 2015 was plastic packaging. Much of this packaging, including polystyrene and other plastics, does not break down quickly and when they are disposed in landfills, they create long-term environmental problems. The production of packaging uses natural resources including water, and electricity that has independent environmental impacts. By products of manufacturing are also a concern.

Plastic packaging waste generation, 2014 (million Mt)



Source: UN environment *singleUsePlastic_sustainability*

Understanding Packaging



INTRODUCTION

The product packaging often has information about the content, price and quantity of the product, make it convenient to store and use the product and also tell us where the product was manufactured and how and by when it should be utilised. Packaging sometimes has important symbols like the recycling symbol, ingredients source (vegetarian and non vegetarian), hazards etc.

The lesson plan encourages students to understand packaging, its relevance and purpose and also the impacts packaging waste is creating on the environment.

Objectives:

Students will be able to

- identify different types of packaging material used for household products.
- list different types of packaging material available in the market.
- visualise different types of packaging material and sort these into different categories.

Eco-Schools Steps: Audit, Action Plan development, Evaluation and Monitoring, Inform and Involve

Curriculum Linkage: Science/ Environmental Studies/Social Science/ Numeracy and Mathematics



6-8
Years

Time required/ Duration:

- **Classroom session 1:** 45 minutes for the teacher to do a background introduction on packaging and for the colouring and circling activity.
- **Home assignment 1:** Four hours over a week for completing the packaging worksheet and to collect and bring back to their classrooms different types of packaging material.
- **Classroom session 2:** 90 minutes provided to students to develop a “display on packaging material”.

Resources Required:

- Resource Sheet 1 for identifying human-made packaging and packaging in nature
- Resource sheet 2 : Worksheet for listing different types of packaging material available in the market
- Different packaging material collected by students or teachers
- Dedicated display board
- Student’s stationery including colouring material (crayons/ colour pencils/ others)



Activity

Classroom session 1

- Start with a discussion introducing students to packaging. To get students to understand “packaging”, it will be useful to ask probing/ leading questions to students and work further based on the response received.
 1. What packaging is?
 2. What is the importance of packaging?
 3. What are the problems caused by different types of packaging?
- Hand over the colouring sheet on human-made packaging and packaging in nature to the students.
- Ask the students to colour objects which represent packaging in nature and circle those which represent human made packaging.

Home Assignment 1

- Ask the students to fill a worksheet on different packaging material based on the home survey.
- Collect some of these packaging material and bring it back to class along with the filled in worksheets. These packaging material will be required for Classroom session 2.
- Instruct students to fill in Resource 2 (Worksheet for Packaging material), based on the products which were purchased and brought home during the course of the home assignment.

Classroom session 2

- Review and discuss the worksheets completed by students.
- Ask the students to sort the representative packaging material brought back by students based on waste types (natural or human-made, which should be further categorised into paper based, metal, glass, etc.) and a Eco-Schools display board on packaging material should be developed by students.
- This board should be maintained for A month and will help to inform and involve students.

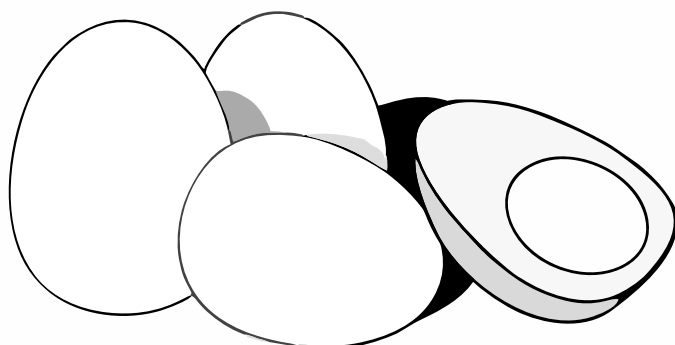
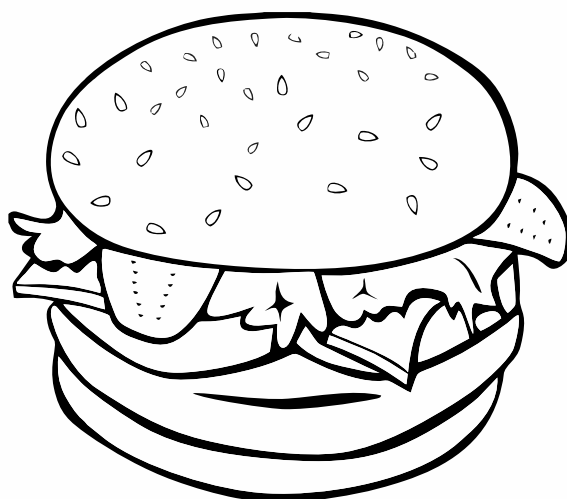
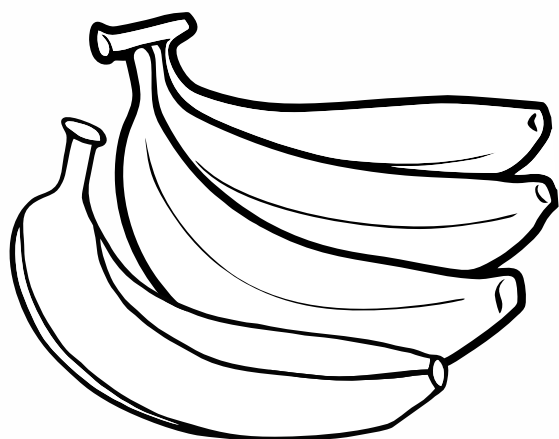
Evaluation:

Colouring the right objects will help teachers ascertain whether the students have understood natural and human-made packaging material.

Sorting of packaging material for the display boards will be a good way to assess whether students have understood the concept.

Resource 1

Colouring Sheet



Resource 2



Smart Shopping Choices



INTRODUCTION

In any market, consumers decide what is sold to them in what quantities. Consumers by picking right can influence the producer in a big way. Advertising can manipulate consumers but a consumer who thinks critically with environmental consciousness can make lots of difference to shape the market.

The lesson plan take students through a process that would lay the foundation for values which can help them move from individual acts of consumption to broader changes influenced by collectives like any democratic processes that can lead to solving our environmental problems.

Objectives:

Students will be able to

- explain packaging waste has an impact on the environment.
- identify perspective and present consumers concerns about packaging waste.
- design and implement a campaign to address packaging waste.

Eco-Schools Steps: Audit, Action Plan development, Inform and Involve, Evaluation and Monitoring

Curriculum Linkage: Science/ Environmental Studies/Social Science/ Numeracy and Mathematics



13-16
Years

Time required/ Duration:

- **Classroom Session 1:** 45 minutes for the teacher to do a background introduction on the impacts of packaging waste on the environment, and how to go about conducting the consumer survey.
- **Group Assignment 1:** One week time provided to each student to undertake the Consumer survey; each student group to undertake survey with at least 4-5 consumers.
- **Classroom Session 2:** 90 minutes for consolidating and presenting the student surveys.
- **Classroom Session 3:** 45 minutes for brainstorming campaign ideas (skit/ musical) for promoting information about responsible choices and disposal of packaging material.
- **Group Assignment 2:** 15 days for implementing the campaign (3-4 times over 15 days).

Resources Required:

- Resource 4 (Consumer Survey Form)
- Writing material
- Materials for implementing the campaign



Activity

Classroom session 1

- Brainstorm with students examples of different types of packaging materials (cardboard, glass, wood, hay, leaves, plastic, etc) and thereby introduce to them the importance of packaging.
- Discuss and introduce to students the impacts created by packaging waste on the environment.
- Explain to the students about the survey to be undertaken by them in individually/in groups to find out what consumers feel are the impacts of packaging waste. Discuss the survey sheet prior to undertaking the survey.
- Discuss and guide the students on how to approach consumers requesting them to help complete the survey.

Group Assignment 1

- Provide students one week time to get responses to the Consumer Survey Form.
- The Consumer Survey Form has 20 questions, students should be informed that it might take about 30 minutes for respondents to complete the survey.
- Each group could interview a minimum of 4-5 members.

Classroom session 2

- Ask the students to tabulate the findings and organize the response received.
- Ask the students to analyse and present the results. This should be done through classroom based discussions and student groups should be encouraged to represent the results in the form of a infographic.
- The infographs prepared should be displayed on the Eco-Schools bulletin board.

Classroom session 3

- Based on the survey results guide the students to identify key messages to develop a campaign plan for creating awareness about packaging waste.
- As part of the campaign plan let the students choose their media like short skit (7-10 min duration should be ideal) or create a musical (about 7-10 min) addressing the problem and highlighting some solutions.

Activity

Group Assignment

2

- The skit or the musical prepared by the students should be performed by them in front places like a shopping mall to create awareness regarding packaging waste.
- Teachers might have to take permission from the mall authorities for the same.
- The awareness should be created a minimum of 3-4 times over the duration of 15 days. A video can be made of the performance and shared on social media.
 - For video: Refer Lesson Plan 5 from chapter “Learning to be an Environmental Journalist”

Evaluation:

Subsequent to the surveys teachers/ facilitators should be able to help students conclude the consumer opinion about impacts of packaging waste on the environment.

Campaign evaluation: some of the bystanders who watched the student performance should be asked what they felt regarding the same.

Resource 4

Consumer Survey Form

1. The survey should help assess what consumers feel about packaging?
2. The survey should help understand whether consumers are concerned about how packaging waste affects the environment.
3. The survey should help understand whether the consumer plans to take any action to reduce packaging waste.

Are you a consumer?	Yes	No
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Name any 3 products you consume regularly

Do you think these products contain packaging?	Yes	No
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Name 5 different types of packaging material that you can think of

When you purchase milk, packaged in different forms like pouches, tetrapaks, or bottles, do you think of recycling any of these packaging	Yes	No
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Do you think these packaging materials to package milk are harmful to the environment?	Yes	No
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Why?

Do you think of packaging when you buy a product e.g. shampoo? Would you opt for:		
sachets	small throw away bottles	larger containers

Do you think your choice of purchasing a shampoo in one of the above packaged forms can make a difference?	Yes	No
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Can you mention why and how?

When you shop for vegetables	would you buy fresh vegetables cut and cleaned vegetable stored in different packaged materials including plastic disposable trays, polystyrene trays, etc
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Do you think your choice makes a difference? How and Why?

When you go shopping, would you care to carry your bag	Yes	No
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If No, choose one of the following:

- Do you go to a store and demand for a carry bag
- Do you think it is the responsibility of the store to give you a carry bag?
- Do you think it is your responsibility to take a bag with you when you go for shopping?

When you shop do you look for packaging which is made from recycled material?	Yes	No
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Do you look at the packaging for any of the following? Grade them from 1-5 in the order of your priority

Expiry date

Recycling symbols

Contents of packaging

Material of packaging used

Cost of the product

Offers like buy one get one free/extra content for free

Do you save packaging material for recycling	Yes	No
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How do you dispose different packaging items like plastic bottles, corrugated sheets, glass bottles, Tetrapak, Aluminium cans

Throw away as mixed garbage	Segregate for recycling
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What kind of packaging material are you most likely to return for recycling?

Plastic bottles	Corrugated sheets	Glass bottles	Tetrapak	Aluminium cans
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Why?

Do you think you must help reduce packaging waste	Yes	No
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Why?