

Food Packaging and Labelling - REVISION

These notes are taken from:

BBC.co.uk/Bitesize, and are primarily for GCSE Food Technology rather than GCSE Catering

Food packaging does not just preserve and protect food during transit, but also carries information about it, and displays or promotes it. Packaging can be made from a wide range of materials, some of which are more **environmentally-friendly** than others. There are three layers of food product packaging - **primary, secondary and transit packaging**.

Food labelling is needed to protect consumer health and consumer choice, and **EU** law lays down what information must be given on food product labels.

Packaging: functions

The main purposes of food packaging are:

- To preserve the product
- To protect the product from damage, both accidental or malicious damage (where someone damages the product on purpose)
- To make the product more attractive to the consumer
- To make it easier to transport the product

Packaging functions	
 To preserve	 To protect (including prevention of tampering)
 To promote	 To transport

Packaging: materials

Plastics

Plastics are widely used in food packaging because they are:

- versatile - in particular, they can be either flexible or rigid
- resistant to acids and other chemicals
- easy to print on
- lightweight, and
- cheap to produce

(NB: not all plastics have all the above qualities.)

The table shows the different types of plastics used in food packaging. **YOU DO NOT NEED TO LEARN THESE NAMES - SO DON'T WASTE TIME TRYING TO MEMORISE THESE!**

Name	Uses and properties
Polyvinyl Chloride (PVC)	Bottles for juice and mineral water
High-Density Polythene (HDPE)	Bottles for milk
Polystyrene (PS)	Bin-liner bags and containers for frozen foods PS can stand extreme cold
Low-Density Polythene (LDPE)	Egg cartons and yoghurt pots LDPE can withstand heat and provide insulation
Polypropylene (PP)	Biscuit and crisp wrappers; squeezable bottles for sauces PP is used for chilled products, but not frozen ones
Polypropylene Terephthalate (PET)	Oven-ready packaging and fizzy-drink bottles

A special packaging technique is **Modified-Atmosphere Packaging (MAP)**. Here food products are contained in a plastic container, in which the air has been modified to prolong the shelf-life of food and to stall colour deterioration and other problems, until the package is opened. The product can be seen through clear packaging. MAP is used to package:

- cold meats
- smoked fish
- vegetables
- cheeses
- salads
- fresh pasta
- part-baked breads, and
- poppadoms

Non-plastic packaging materials

Non-plastic packaging materials include paper, card, metal and glass. The table details their advantages, disadvantages and uses.

Material	Advantages	Disadvantages	Uses
Glass	Reusable, visual, heat-resistant, recyclable, keeps shape, low cost	Fragile, safety issues, heavy	Baby foods, salad cream, pickles
Metal	Ring pulls (for easy opening), recyclable, lightweight, impermeable, withstands heat processing	May react with food	Soup cans, take-away dishes, bottle tops
Card/paper	Easy to print on, cheap to produce, biodegradable, recyclable, can be moulded to a variety of shapes, can be coated, lightweight	Not water-resistant, may not protect product from damage	Fruit-juice cartons, egg boxes
Heat-proof paperboard	Hygienic, withstands low and high heat (- 40 °C to + 230 °C)	N/A	Microwave meals

Green packaging

Green packaging causes less damage to the environment than other forms of packaging - it is 'environmentally friendly'. There are three types of green packaging:

- **Reusable packaging**, such as glass bottles, which can itself be cleaned and re-used to store the same food or something else.
- **Recyclable packaging**, which is made of materials that can be used again, usually after processing, for packaging or some another purpose. Recyclable packaging materials include glass, metal, card and paper.
- **Biodegradable packaging**, which will easily breakdown and disappear into the soil or the atmosphere, without causing damage.

Packaging that can be recycled should carry standard symbols that tell people what the product is made from and how it can be recycled. The key symbols are outlined in the table below:

YOU DO NOT NEED TO LEARN THESE SYMBOLS - SO DON'T WASTE TIME TRYING TO MEMORISE THESE!

Symbols used on recyclable packaging					
	Mobius loop		Low-density		Green dot
	Glass		Recyclable steel		Board
	Aluminium		Polyethylene terephthalate		High-density polyethylene
	Polyvinyl chloride		Low density polyethylene		Polypropylene
	Polystyrene		All other plastics		

Layers of packaging

There are three levels of packaging (as shown in the diagram below).

- **Primary packaging** is what the consumer sees at the point of sale. It needs to adequately contain and protect the food product, as well as displaying it and carrying information about it
- **Secondary packaging** is the middle layer of packaging - for example a cardboard box with a number of identical products inside
- **Transit packaging** is the outer container that allows easier handling during transfer between factory, distribution centres and retailers



Labelling

The law requires certain information to be given on all pre-packed foods to ensure that the consumer is protected and informed. The guidelines are laid down by the **EU**.

Look at the can of peas below. These are the items on the label that are required by law.

- manufacturer's name and contact details
- name of the product
- description of the product
- weight (NB - some foods are exempt, for example bread)
- ingredients (listed in descending order of weight)
- cooking/heating instructions
- storage instructions
- best-before date



The following items are not legal requirements, but are nevertheless good practice and often included on packaging:

- illustration of product
- price
- nutritional values of the product
- customer guarantee
- the batch-code and bar-code numbers
- opening instructions

Labelling rules

Every pre-packed food and drink sold in the UK or the rest of the European Union (EU) must show clearly on the label if it contains one of the following as an ingredient (or if one of its ingredients contains, or is made from, one of these):

- celery
- cereals containing gluten (including wheat, rye, barley and oats)
- crustaceans (including prawns, crabs and lobsters)
- eggs
- fish
- lupin (*Lupins are common garden plants, related to legumes such as peas, lentils and beans. The seeds from some types of **lupin** can be used in foods such as seeded bread and can also be ground to make **lupin** flour, which is used sometimes in foods such as pastries*)
- milk
- molluscs (including mussels and oysters)
- mustard
- nuts, such as almonds, hazelnuts, walnuts, Brazil nuts, cashews, pecans, pistachios and macadamia nuts
- peanuts
- sesame seeds
- soybeans
- sulphur dioxide and sulphites (preservatives used in some foods and drinks) at levels above 10mg per kg or per litre

Some people are sensitive to foods that are not on this list, so always check the ingredients carefully.

Food packaging and labelling - Test your knowledge

1 . Why is food packaged?

- a) To protect it
- b) To preserve it
- c) To promote it
- d) To transport it
- e) All of the above

2 . What colour used to represent a product that is environmentally friendly?

- a) Red
- b) Orange
- c) Yellow
- d) Green
- e) Blue

3 . Which material is most commonly used for packaging baby foods?

- a) Metal
- b) Cellophane
- c) Plastic
- d) Cardboard
- e) Glass

4 . Which material is most commonly used for packaging soup?

- a) Metal
- b) Cellophane
- c) Plastic
- d) Cardboard
- e) Glass

5 . Which material is most commonly used for frozen foods?

- a) Metal
- b) Cellophane
- c) Plastic
- d) Cardboard
- e) Glass

6 . Modified-Atmosphere Packaging (MAP) packages food in a plastic container in air that has been modified. This prolongs the shelf-life of food and stalls colour deterioration and other problems until the package is opened. Which of these products is it used for?

- a) Cold meats
- b) Smoked fish
- c) Salads
- d) Cheeses
- e) All of the above

7 . You buy a can of baked beans. What type of packaging is the can?

- a) Designer packaging
- b) Transit packaging
- c) Primary packaging
- d) Secondary packaging
- e) Tertiary packaging

8 . Which of the following does NOT have to be printed on a food label by law?

- a) Manufacturer's name and contact details
- b) Name and description of the product
- c) Price
- d) Ingredients (listed in descending order of weight)
- e) Cooking/heating instructions

9 . For most products, the law states that the packaging should display the weight of the product, but some foods are exempt, including loaves of bread: true or false?

10 . The following items usually appear on food packaging, but which of them don't have to appear there by law?

- a) Illustration of product
- b) Nutritional values of the product
- c) The bar-code
- d) Opening instructions
- e) None of these have to appear on a label by law.

Food packaging and labelling

You scored 10 out of 10

1 Why is food packaged?

e

- All of the above

Correct.

Well done. Food is packaged for all these reasons. Packaging helps to protect, preserve, promote and transport the product.

2 What colour used to represent a product that is environmentally friendly?

d

- Green

Correct.

Well done. Green is used to represent a product that is environmentally friendly.

3 Which material is most commonly used for packaging baby foods?

e

- Glass

Correct.

Well done. Glass is most commonly used for packaging baby foods.

4 Which material is most commonly used for packaging soup?

a

- Metal

Correct.

Well done. Metal is most commonly used for packaging soup.

5 Which material is most commonly used for frozen foods?

c

- Plastic

Correct.

Well done. Plastic is most commonly used for frozen foods.

6 Modified-Atmosphere Packaging (MAP) packages food in a plastic container in air that has been modified. This prolongs the shelf-life of food and stalls colour deterioration and other problems until the package is opened. Which of these products is it used for?

e

- All of the above

Correct.

Well done. Modified-Atmosphere Packaging (MAP) is used for all of these: cold meats; smoked fish; salads; cheeses.

7 You buy a can of baked beans. What type of packaging is the can?

c

- Primary packaging

Correct.

Well done. The can containing the baked beans is called the primary packaging.

8 Which of the following does NOT have to be printed on a food label by law?

c

- Price

Correct.

Well done. Price does NOT have to be printed on a food label by law.

9 For most products, the law states that the packaging should display the weight of the product, but some foods are exempt, including loaves of bread: true or false?

true

Correct.

Well done, it's true. For most products, the law states that the packaging should display the weight of the product, but some foods are exempt, including loaves of bread

10 The following items usually appear on food packaging, but which of them don't have to appear there by law?

e

- None of these have to appear on a label by law.

Correct.

Well done. None of these have to appear on a label by law: illustration of product, nutritional values of the product, bar-code numbers or opening instructions.