



TEACHER NOTES

PRESERVATIVES

P3. Methods of food preservation

This activity helps to summarise the main methods of food preservation.

The activity includes a table of preservation methods with statements which give descriptions of how the methods prevent the spoilage of food.

Pupils have to match each description with the correct method.

Pupils complete the table by adding examples of foods preserved by each method. The correct matching is as follows:

- a. freezing
e.g. a great variety of foods including meat, vegetables
- b. curing
e.g. meat
- c. chemical preservatives
e.g. cooked meats, wine, some cheeses
- d. canning/bottling
e.g. fruit, vegetables
- e. cooking
e.g. various
- f. jam making
e.g. most fruits
- g. dehydration
e.g. soups, vegetables, pasta
- h. pickling
e.g. fruit, vegetables
- i. irradiation
e.g. herbs and spices only¹
- j. chilling (domestic refrigeration)
e.g. milk, cream, butter
- k. gas or vacuum packing
e.g. bacon

KS3
science or food technology

Timing - 30 mins; a possible homework exercise

Two pupil activity sheets P3 accompany this activity.

¹Herbs and spices are the only foods which are allowed to be irradiated in bulk at the present time. In practice, however, although the technology is available, it is rarely used – presumably because it is still controversial.

There is a need to preserve and process much of the food that is grown. Preservation of food is necessary to ensure a safe supply of nutritious food to all individuals. It is a way of preventing wastage of food when this is in quantities too great for immediate consumption. It allows foods to be eaten out of season and gives variety and nutritional quality to our diets all year round.

Many foods must be processed before they are fit for us to eat. Processing often involves making the food easier to digest, preserving it, improving its flavour and its texture.

Methods of processing vary from being simple, such as cooking raw vegetables at home, to extremely complicated. Processing can be a great art as shown by the blending of many ingredients to create superb dishes by skilled chefs. It can be on a huge industrial scale such as the commercial baking of bread.

As soon as food is harvested (picked or slaughtered) the organisms of decay begin breaking it down. This leads to unacceptable deterioration and the possible production of dangerous substances. Preserving food must try to stop or greatly slow down this natural process.

The skill in preserving and processing food is to get the best quality of product that is possible. The aim is to produce the best colour, texture and flavour but without reducing the nutritive value of the food. Processing must not introduce toxic material and must be done at a cost that is acceptable to the consumer.

For you to do

The table, on the next page, shows the main methods of food preservation. Below it are descriptions of how the methods of preservation are able to stop the spoilage of food.

Match the method of preservation with how it works. The first is done for you.

In the final column of the table add the names of foods that can be preserved by each method.

Method	How does it work?	Examples of foods
Cooking	e	meat, vegetables, eggs, etc.
Domestic refrigeration		
Freezing		
Canning/ bottling		
Dehydration		
Curing		
Pickling		
Jam making		
Gas or vacuum packing		
Chemical preservatives		
Irradiation		

Match these statements against food preservation methods.

- a. slows down reactions considerably; 'removes' water by turning it into a solid so that it cannot be used
- b. salt is added which makes the liquid environment very concentrated; inhibits the action of enzymes and the processes of microorganisms
- c. substances such as sulphur dioxide and sodium benzoate interfere with microbial growth
- d. high temperatures destroy enzymes and microorganisms; removes and excludes oxygen
- e. destroys enzymes and most microorganisms
- f. adds sugar which makes the liquid environment very concentrated; inhibits the action of enzymes; inhibits the processes of microorganisms
- g. removes water completely; makes the food a solid
- h. adds (usually) vinegar; makes the environment too acidic for enzymes and bacteria to function normally
- i. rays from a radioactive source are passed through food; microorganisms are destroyed
- j. slows down reactions
- k. removes and excludes oxygen to inhibit the growth of organisms which require it