

## HOMWORK SHEET

NAME

FORM

DATE

## Food Spoilage

Read the passage carefully then complete the activities that follow.

Fresh food and drink can spoil. Their packaging will have a shelf life printed on it. After a 'Best Before' date the food and drink will not taste nice or it may not be safe to eat if eaten after a 'Use By' date.

There are three reasons why food and drink spoils:

**Oxygen** – some parts of the food can react with oxygen and make a bitter chemical.

**Water** – sometimes water is taken in and the food gets soft, other times water is lost and the food gets hard.

**Microbes** – these can make foods unsafe to eat.

### Focus on Microbes

Some foods and drinks are made using microbes. Yeast is a common microbe and is used to make bread and beer. Bacteria are used to turn milk into yoghurt. But, some microbes like Salmonella are harmful and can cause illness or even death.

Food scientists can reduce microbe growth by adding natural acids. Citric acid, found in lemons, can be put into drinks to increase the acidity. The lower pH makes it difficult for microbes to grow.

Food and drink can be pasteurised. The sealed packs are quickly heated to 70°C for 2 minutes and then rapidly cooled. This kills off the microbes without cooking the food or drink, which could change its taste. Sometimes food – such as canned food – is sterilised by heating to a higher temperature for a longer time. This kills all the microbes.



Flash pasteuriser. Image: Centec

## Activities

1. List the three ways that food and drink can spoil

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2. Describe what shelf life is.

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3. Explain why citric acid is added to some soft drinks.

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4. Suggest why yoghurt is not pasteurised after bacteria are added.

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5. Summarise the article as a Tweet (no more than 140 characters can be used).

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## Going further

If you want to find out more about a career as a food scientist visit [www.chillededucation.org](http://www.chillededucation.org)

