

**FOOD SPOILAGE
HOMEWORK 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



TEACHERS NOTES

Food spoilage

Teaching ideas

This activity is a comprehension exercise and could be set as a homework task. The web-link provides further information and activities related to food science and careers.

All of the answers can be found in the passage, but the questions get progressively more challenging (following Bloom's taxonomy). By pairing the students with strong and weak reading skills, pupils can support each other to achieve the task.

To focus students on examination technique, draw their attention to the command words in each activity e.g. list, describe, explain, suggest, summarise. Ensure that students understand what is required of them.

The very best Tweets could be used on school social media or website to share student's lesson experiences.

Answers

1. Reaction with oxygen, gain or loss of water and microbes.
2. The amount of time a food or drink still tastes nice and is safe to eat.
3. Answers might include any of the following points: Citric acid will increase acidity (lower pH). It is a weak natural acid found in fruit and is safe to eat and is safe to eat. Reduces the growth of microbes and so increases shelf life.
4. Microbes (bacteria) are needed to make yoghurt. If the food was pasteurised after bacteria were added, they would be killed and the milk would not be able to be turned into yoghurt.
5. Students own response limited to 140 characters.