Zig Zag Education

Food and Nutrition GCSE (9–1) | AQA | 8585

Active Revision Worksheets

for AQA GCSE Food Preparation and Nutrition: Food Safety

zigzageducation.co.uk

POD 12133

Contents

Teacher's Introduction

This resource contains activity worksheets covering the whole of the content for **3.4 Food Safety** of the AQA (9–1) GCSE Food Preparation and Nutrition (8585) specification.

These worksheets provide a systematic structure for revision and ensure that students have covered everything after working through them.
The resource can be used as:

- a comprehensive revision workbook in the run-up to the exam
- homework sheets to consolidate learning
- class exercises or independent practice

Remember!
Always check the exam board website for new information, including changes to the specification and sample assessment material.

Each topic follows this structure:

Section A (write-on)	This section is designed to facilitate students to *demonstrate knowledge and understanding*, and contains factual questions and activities based on what they have learned in class, aligned to AO1.
Section B (write-on)	This section supports students to *apply their knowledge and understanding* of nutrition, food, cooking and preparation, aligned to AO2.
Section C (non-write-on)	This section challenges students to *analyse and evaluate* different aspects of nutrition, food, cooking and preparation, aligned to AO4.
Exam-style questions (non-write-on)	This section contains exam-style questions for students to practise for their exams.

Note: AO3 (*Plan, prepare, cook and present dishes combining appropriate techniques*) is not covered in the exam, and is explicitly for the NEA, so has not been included in this revision resource. However, some **extension tasks** have been included throughout to get students to think about planning, preparing, cooking and presenting dishes linked to different questions and/or activities, combining appropriate techniques.

Each topic has a checklist, based on the specification, of everything students need to know for their exams. Students should use this table to track their progress and confidence against each of the given objectives for the topic. The levels are as follows:

- **Bronze** – 'I am not completely confident. I have revised the content, but I don't fully understand it and need to revise this more.'
- **Silver** – 'I am semi-confident. I understand the content, but I need to improve my application and evaluation of knowledge.'
- **Gold** – 'I am confident in my knowledge and application of the content and I feel I can effectively evaluate and analyse the content if required.'

Not every student will need to work through every section – where students are happy that they understand the theory content, they may wish to progress directly to sections B and C for practice. However, should students fail to score full marks in these sections, it is recommended that they go back and do the knowledge revision activities in Section A.

March 2023

Topic 1: Food spoilage and con

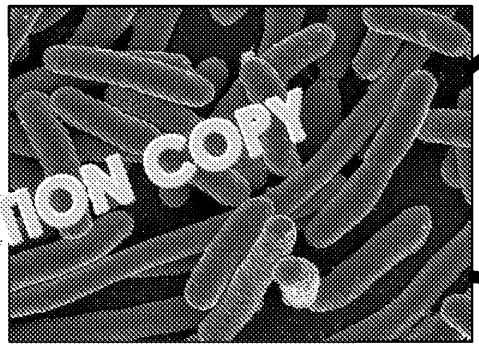
3.4.1.1 Microorganisms and enzym

Knowledge checklist

Differences between **yeast, bacteria, mo d** **zymes**
The role of temperature, moisture, f d time in the growth of microorga
Methods of controlling th wth o microorganisms and enzymic action
Identifying high-ri

Section A: Demonstrate your knowledge

1. Below is a picture of *E. coli* bacteria. Label the image to identify **three** cond that can influence microorganism growth.



Microscope image of E. coli *bacteria*

2. Define the following:

a) Bacteria

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b) Yeast

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c) Moulds

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3. Fill in the gaps in the sentences below to complete the paragraph. Use the

browning, reactions, protein, acid, denatured, catalysts, lemo

Enzymes are _____, which means they speed up c

_____. They are usually m_____ of _____

means they must be _____ to control their effects

the application of h_____ – for example, by

_____ vegetables or by putting _____

on fruit to prevent _____.

EXTENSION: Other than those mentioned in question 3, make a list
activity in food.

4. Describe **two** ways that enzymes, yeast and moulds can each lead to the spoi
Give examples in your answer.

Enzymes

1. .....

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2. .....

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Yeast

1. .....

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2. .....

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Moulds

1. .....

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2. .....

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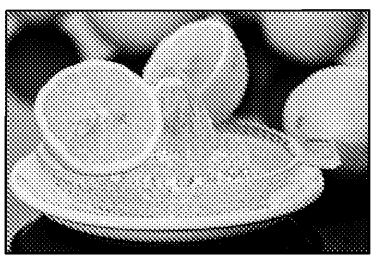

Section B: Apply your knowledge

1. Using an example of a ready-to-eat food, explain why ready-to-eat foods are
growth when served as part of a buffet.

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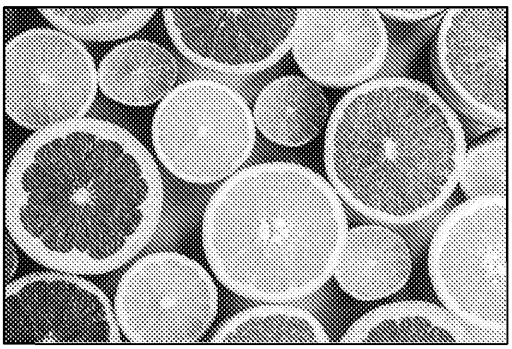
2. Use the pictures below to help identify three methods of controlling microo
then explain how each method helps to control the growth of microorganis



Method: .....

Explanation: .....

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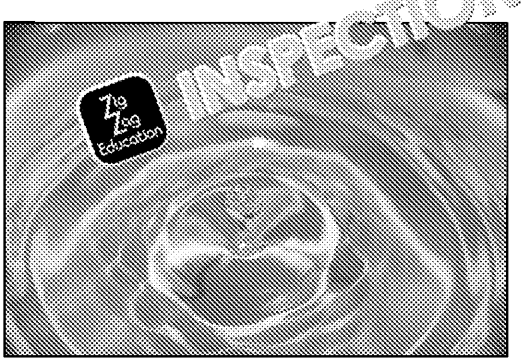

Method: .....

Explanation: .....

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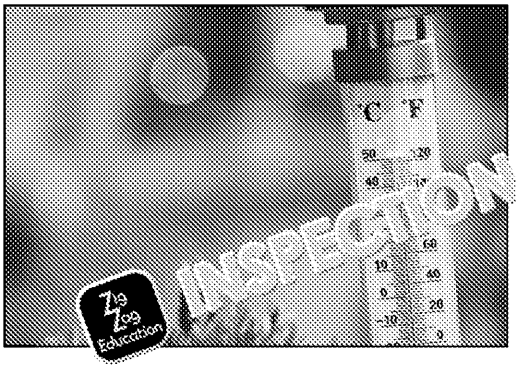

Method: .....

Explanation: .....

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3. Examine the pictures below. Assess whether you can eat each of the foods pic
Explain your reasoning.

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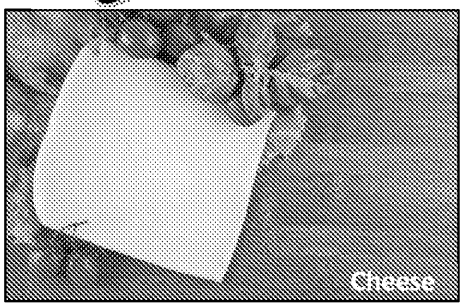

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SECTION C: ANALYSE AND EVALUATE

1. Yousef wants to make some bread, but he can't choose which recipe to use
below and evaluate how each recipe will affect yeast action in the bread.

Recipe 1:	***Recipe 2:***
✓ *bread flour*	✓ *bread flour*
✓ *instant yeast*	✓ *fresh yeast*
✓ *salt*	✓ *honey*
✓ *warm water*	*olive oil*
	✓ *warm water*

EXTENSION – h following activity a try to see how yeast is u
ire ed.uk/12133-yeast

2. **Oh no!** Esther has forgotten her lunch. Now she's going to buy a chicken sa
from the canteen before it closes. But the sandwiches and fruit have been l

Analyse what microorganism growth and enzymic action might have occurre
buys it.

Exam-style questions

GCSE Paper 1: 3.4.1.1

1. Give **three** ways bacteria growth in ready-to-eat foods can be prevented.

GCSE Paper 1: 3.4.1.1

2. Explain how blanching stops enzymic action in vegetables.

GCSE Paper 1: 3.4.1.1

3. Meredith bought a punnet of grapes but hasn't had time to eat them and n

   Analyse and evaluate how microorganisms and enzymes could have affecte
   Meredith could control their effects next time.

Topic 1: Food spoilage and cor

3.4.1.2 Signs of food spoilage

Knowledge checklist

The process of **enzymic** browning
The process of **mould** growth and rec[illegible] signs
The process of **yeast** action on [illegible] crops

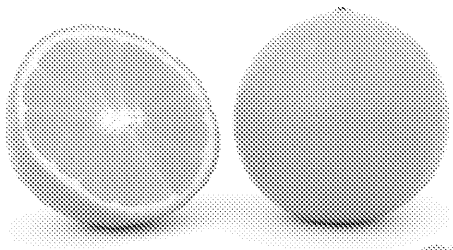
Sec[illegible] Demonstrate your knowledge

1. Complete the table below by marking each statement as either true (T) or fa[illegible] statements as you go.

Statement	True/False	Corre[illegible]
a) Mould reproduces via spores.		
b) Mould is always visible on food.		
c) Oxidation is caused by a lack of oxygen.		
d) All mould is safe to eat.		
e) Food affected [illegible] [illegible] to eat.		
f) Wild yeast is harmless to crops.		

2. Examine the following images. Describe how mould would affect each food

Oranges



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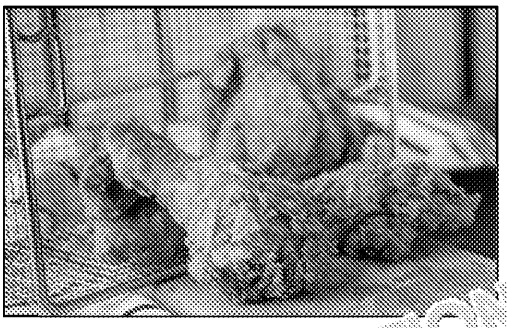

Fried chicken

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Bread

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EXTENSION: Consider preparation techniques that could be applie
fruits to restrict mould growth.

3. Order the stages of mould growth and re ro uction. *(The first one has beer*

The mould spore s oots with fruiting bodies at the top.
Fruit es ripen.
Mould spores land on a food.
The mould spores begin to germinate.
The mould sends down roots into the food.
Fruiting bodies burst and release a shower of spores.

4. a) Name the reaction that takes place during enzymic browning.

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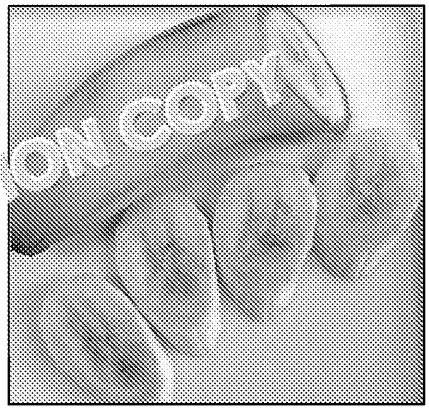
b) Tick the fruits and vegetables below that are affected by enzymic browni

Onions		Grapefruit	
O s		Blueberries	
B as	✓	Potatoes	
Avocados		Grapes	
Raspberries		Apples	

Section B: Apply your knowledge

1. a) Explain the process of enzymic browning on the banana.



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b) Suggest **three** ways enzymic browning of fruit can be prevented.

1. .....

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2. .....

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3. .....

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2. Using examples, explain the effect wild yeast has on fruit.

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Extension: You are going to make a fruit salad. Describe the acti
enzymic browning of fruits.

Section C: Analyse and evaluate

1. Anjali has bought a loaf of bread but isn't sure how to store it. She can put it

   Analyse the effect each storage method would have on microorganism grov

Exam-style questions

GCSE Paper 1: 3.4.1.2

1. Which of the following actions will **not** cause enzymic browning?
   a) Grating an apple
   b) Mashing an avocado
   c) Roasting potatoes
   d) Peeling a banana

GCSE Paper 1: 3.4.1.2

2. Explain **two** ways of preventing microorganism action on produce.

Topic 1: Food spoilage and cor

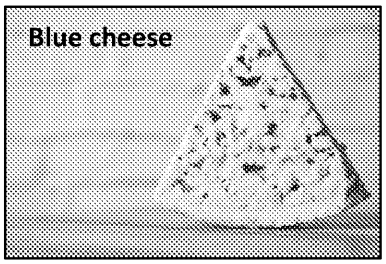
3.4.1.3 Microorganisms in food produc

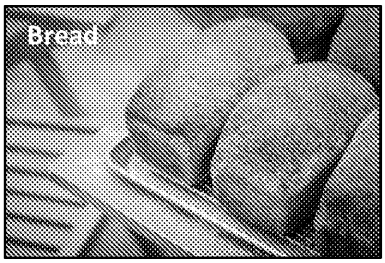
Knowledge checklist

The processes of beneficial microorganisms in fo[illegible]oduction
The processes of **mould** in blue cheese [illegible]s in bread and **bacteria** in yo and cheese

Sec[illegible] Demonstrate your knowledge

1. Examine the images below and identify the microorganism used in the prod





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2. a) Complete the flow chart on the process of chee[illegible]oduction below.

Stage of productio[illegible]	Why it'
1. Mill[illegible]rised.	
2.	Turns lactose into lactic acid, whi preservation and coagulates prot
3.	Coagulates milk, separating it int
4. Curds are cut.	
5.	Needs to be removed for cheese other products, e.g. ricotta.
6. Curd is dried.	Dr[illegible]m[illegible]e whey.
7. Curd is m[illegible]	Creates a better texture in final p
8.	Salt is added for flavour and pres into a solid mass.
9. Cheese is ripened/matured.	

b) State **two** ways mould can be added to cheese.

1. .....

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2. .....

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c) Describe why mould is added to some cheeses.

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Section B: Apply your knowledge

1. When making cheese, bacteria cultures must be added after the milk is past

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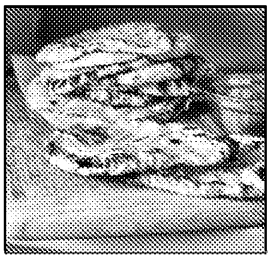
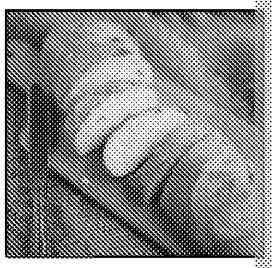
2. Examine the two images below. The bread on the left has no yeast in it, wh
Explain why the resulting bread is different.





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Extension: Make a list of bread recipes that don't require yeast, them a go and see how they turn out.

Section C: Analyse and evaluate

1. Assess how you can tell whether a mouldy cheese is safe to eat.

Exam-style questions

GCSE Paper 1: 3.4.1.3

1. Which microorganisms are used to help ripen cheese?

GCSE Paper 1: 3.4.1.3

2. Give **two** ways bacteria affect yoghurt production and explain why each has

Topic 1: Food spoilage and cor

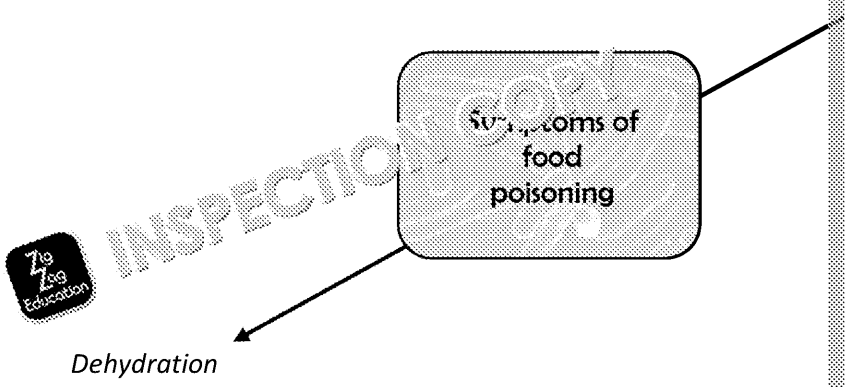
3.4.1.4 Bacterial contamination

Knowledge checklist

The different sources of **contamination**
The main **bacteria** that cause food poisoning, their sources and methods of controlling contamination
Symptoms of **food poisoning**

Section 1: Demonstrate your knowledge

1. Expand the mind map below by adding the main symptoms of food poisoning that have been given.



2. State **three** places bacterial contamination can come from.

1. .....
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2. .....
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3. .....
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3. Define the term 'cross-contamination'.

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Section B: Applying your knowledge

1. Explain how food poisoning occurs.

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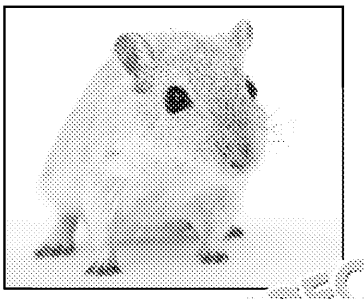
2. Fill in the table below, giving **at least one** source and **at least one** symptom

Bacteria	Sources	Symptoms
Staphylococcus aureus		
Listeria		
Campylobacter		
E. coli		
Salmonella		

3. Examine the images below. Explain how each can cause contamination.



Rodents (pests)

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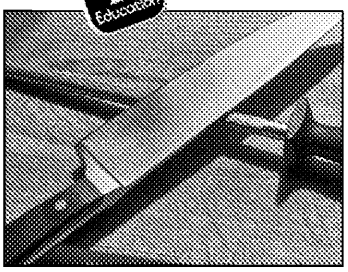

Knives

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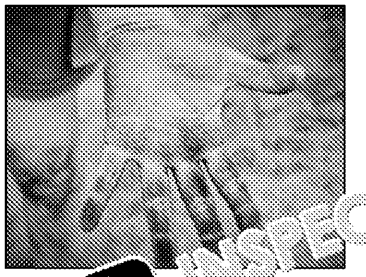

Hands

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Section C: Analyse and evaluate

1. Magda is making a prawn sandwich. First, she cooks the prawns, then she adds lettuce and mayonnaise.

   Evaluate how Magda can prevent bacterial contamination while making this sa

2. Evaluate whether raw or cooked foods are more likely to be contaminated b

Exam-style questions

GCSE Paper 1: 3.4.1.4

1. The temperature range that makes up the *danger zone* i
   a) 5–63 °C
   b) 5–75 °C
   c) 3–60 °C
   d) 10–50 °C

GCSE Paper 1: 3.4.1.4

2. Explain how food contamination can be prevented.

GCSE Paper 1: 3.4.1.4

3. AJ made a chicken Caesar salad for a dinner party, which contained cos lett
   Parmesan, mayonnaise, olive oil and white wine vinegar. The day after the
   with food poisoning and the cause was found to be AJ's salad!

   Assess how the salad could have become contaminated with pathogenic ba
   be prevented next time.

Topic 2: Principles of food

3.4.2.1 Buying and storing food

Knowledge checklist

Temperature control and the correct temperat[illegible] w[illegible] freezing, chilling, storing, cooking and reheating food
Correct use of domestic fridges [illegible] and the importance of covering
Food labelling and dat[illegible]

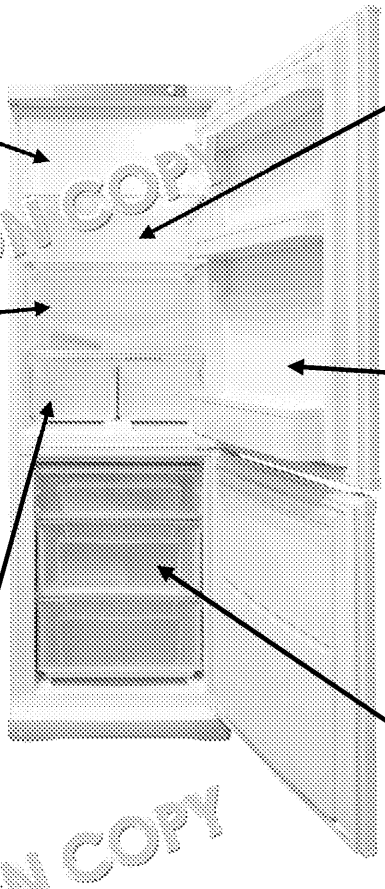
Section 1: Demonstrate your knowledge

1. Below is an image of a fridge-freezer. Describe the correct use for each area of examples of foods that should be stored in each section.

Top shelf:

Bottom shelf:

Drawers:



Extension: Check your fridge at home and reorganise the conten each shelf/compartment.

2. Define what is meant by the 'food danger zone'.

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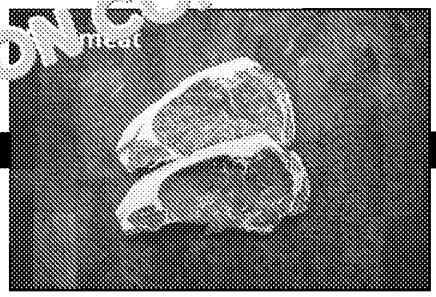
3. Complete the table below by writing in the correct temperature that food should be cooked or stored at for each cooking method.

Method	Temperature (°C)
Cooling in fridge	
Boiling in water	
Freezing	
Cooking foods	
Cooling before refrigeration	
Reheating leftovers	

4. Examine the images below. Give two quality checks for each when buying t

1.



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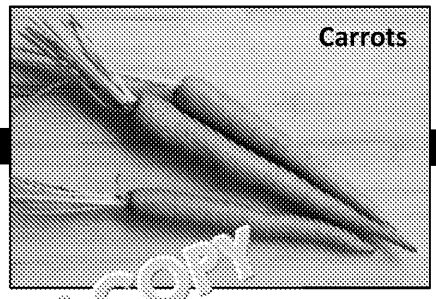

1.

Section B: Apply your knowledge

1. Explain why food should be covered...

... on worktops

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... in the fridge

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... in the freezer

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2. Explain the difference between the date marks 'use-by' and 'best before'.

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Extension: Make a list of food products that will have use-by date have best before dates.

3. Define the term 'ambient storage'.

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Section C: Analyse and evaluate

1. Kemi's fridge is broken and has stopped working. Assess the effects this co

2. Owen can eat his leftovers cold or reheated. Evaluate which method would

Exam-style questions

GCSE Paper 1: 3.4.2.1

1. The co[illegible]m[illegible]rature for a fridge is:
   a) 3–
   b) 0–5 °C
   c) -2–3 °C
   d) 3–7 °C

GCSE Paper 1: 3.4.2.1

2. Give and explain **one** food safety rule for each storage and cooking method
   - Freezing
   - Cooking
   - Reheating

GCSE Paper 1: 3.4.2.1

3. Janaya wants to make dinner for her family and has decided to cook a beef
   will need to buy all the ingredients and store them until the afternoon.

   Explain the food safety principles that Janaya should follow when buying an

Topic 2: Principles of food

3.4.2.2 Preparing, cooking and serving

Knowledge checklist

Food safety principles when preparing, cooking and serving food
How to maintain personal hygiene and keep workspaces clean
Correct cooking times, correct use of food temperature probes and temperature control when cooking and reheating food
Handling high risk foods

Section A: Demonstrate your knowledge

1. Label the image below with the personal hygiene rules you should follow w food. Add as many as you can think of.

2. Remy has just bought a new food temperature probe. Describe how to use

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Extension: Other than using a temperature probe, make a list of readiness when cooking foods.

3. Examine the table below. For each statement, mark it as either true (T) or f
statements you find.

Statement	True/False	Corre
a) Food should be put in the fridge immediately after cooking.		
b) Contamination of food is onl caused by bacteria		
c) ly to wash nds once; at the start of cooking.		
d) Stock in fridges should be rotated so the newest ingredients are at the front.		
e) If you cut yourself, you should put a brightly coloured plaster over the cut.		

EXTENSION: Make a poster to highlight the key tips for cleaning fr
food poisoning.

SECTION B: APPLY YOUR KNOWLEDGE

1. Explain **two** temperatu fr principles for the methods listed below.

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2. .....
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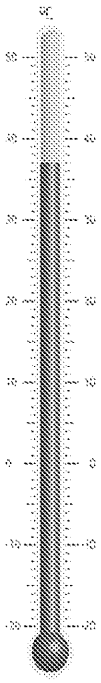

Reheating

1. .....
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2. .....
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2. State and explain **three** food safety principles for workspaces.

1. .....

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2. .....

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3. .....

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3. Compare food safety responsibilities of a waiter and a chef.

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EXTENSION: You have been tasked with making either fishcakes o
you will take to prevent cross-contamination.

SECTION C: ANALYSE AND EVALUATE

1. Deepra reheated s[illegible] leftovers for dinner but got distracted. Two hours la
her din[illegible]d [illegible]own to eat it.

Suggest why Deepra shouldn't reheat leftovers twice and eat this dinner.

2. Louis works at a small café that serves hot and cold food.

Discuss the food safety rules that Louis should follow when preparing, cook

Exam-style questions

1. Food probes should be:
   a) Touching the pan
   b) Inserted into the thickest part of meat
   c) Inserted into the thinnest part of meat
   d) Held on the surface of the meat

2. Explain how personal hygiene affects food safety and risk of contamination.

3. The ZigZag Hotel is considering offering a buffet breakfast for its customers.

   Assess the food safety risks a hotel buffet breakfast might present and explain how they can be prevented.

Answers

Topic 1: Food spoilage and con

3.4.1.1 Microorganisms and enzyme

Section A

1. Temperature (warm c… …s)
   Water (m… co…)
   pH (ba… e g…erally neutrophiles, so grow best at pH 7.0)
   Accept '…ailability' or 'availability of food'

2. a) Bacteria are single-celled organisms that are only visible under a microscope.
   b) Yeast is a fungus that converts sugar into alcohol and carbon dioxide.
   c) Moulds are microorganisms made up of certain types of fungi which spread sp…

3. Enzymes are **CATALYSTS**, which means they speed up chemical **REACTIONS**. They a… made of **PROTEIN**, and this means they must be **DENATURED** to control their effect… be done through the application of heat or **ACID** – for example, by **BLANCHING** veg… by putting **LEMON JUICE** (citric acid) on fruit to prevent **BROWNING**.

4. Answers may include:

Enzymes
- Ripen bananas
- Ripen tomatoes
- Cause enzymic browning
- Break down meat
- Break down fish

Moulds
- Grow on surface of foods
- Send r… s down into food
- Ma… food inedible by produc…
- Spread spores between foods

Yeast
- Fe… fru…
- Pr… lcohol and consume sugar, spoiling fermented foods and sugars
- Ma… bread rise however, too much and the food can become over-fermente…

Accept any other suitable answers.

Section B

1. Answers may include:
   - Any example of ready-to-eat food (moist foods usually high in protein that do … heating), e.g. cooked meats and poultry, cheese, cooked fish, dairy products (e…
   - They may be left out at room temperature in the danger zone (between 5 °C a… to grow faster.
   - If left out for extended periods of time, it provides microorganisms the time to…
   - They are often high in protein, which provides a food source for the bacteria t…
   - They are often moist foods, providing a water source for bacteria to grow.

   Accept other suitable answers.

2. **Method 1: pH/acid**
   Explanation: As microorganism… …e easily in neutral pH environments, acid… multiplying due to their … …ds also denature enzymes and stop them from …

   Metho… te…
   **Explana… …icroorganisms need water to multiply, as they use it for chemical pr… microorganisms cannot grow, so drying food preserves it well.

   Method 3: Temperature
   Explanation: Microorganisms can grow and multiply easily from 5–63 °C – this is th… than this will make microorganisms dormant and slower to multiply, while higher te… completely, stopping them from growing on food until it cools down again.

3. Answers may include:

Salami

- If the mould is on the outside, on the casing, then it is safe to eat as edible mo
  added to the outside of salami to regulate the rate at which it dries and to act
- If the mould is a different colour or is inside the salami, it is not safe to eat as t
  the outside casing; any other mould could produce harmful substances.
- Due to the cured nature of salami, mould has a harder time growing roots into
  the salami should be safe to eat if the mould is only on the surface.

Cheese

- If the mould is consistent in colour and either follows distinct blue veins for bl
  cheese, then it is safe to eat as it has been used in the production of the chees
- If the mould is a different colour or occurs only in patches, it may not be safe t
- Hard cheeses (e.g. Parmesan) and semi-soft cheeses (e.g. Cheddar) are difficul
  away the affected part should leave the rest safe to eat.

Bread

- If there is mould on bread, it should not be eaten, as there is no edible mould
- You should not cut away the mouldy part and use the rest of the bread becaus
  root in, and once the fruiting bodies appear on the surface the rest of the brea
  (although it is not always visible).

Accept any other suitable answers.

Section C

1. Answers may include:
   - There are no free sugars in recipe 1, meaning the bread may rise more slowly
     and ferment.
   - Salt can kill yeast, so if it is not added carefully in recipe 1, the bread may not
   - If the instant yeast in recipe 1 is old, the yeast may be dead and produce no ca
     not rise.
   - In recipe 2, the honey adds more sugar for the yeast to feed on, meaning the b
     quickly) due to more carbon dioxide being produced.
   - Fresh yeast has a much shorter shelf life than instant yeast, so recipe 2 is more
     th not rising.
   - Both recipes use warm water, which will make the yeast more active due to th
   - Both recipes are at risk of the yeast being killed by water that is too hot, which
     rising.

   Accept any other suitable answers.

2. Answers may include:
   - Any sliced fruit or vegetables may have begun to oxidise (the process of enzym
     pleasant to eat.
   - If the food was uncovered before it was purchased, bacteria and mould may h
     grow.
   - If the food was stored at room temperature, the temperature would be in the
     they multiply faster at room temperature.
   - If the food was uncovered, pests could have accessed it and transferred bacte
   - A salad with a salad dressing containing vinegar or lemon juice would be less a
     acid would have denatured enzymes, preventing them from working.
   - Fruit could be contaminated by wild yeast, which would begin to break dow
     fruit was properly washed and stored this would lower the risk.
   - Stale bread could have mould growing on or in it.
   - Ready-made foods are often stored closely together, so mould spores could sp
     fo s.
   - Ready-made foods are often wrapped and packaged, which would prevent mo
     accessing them, preventing external growth.
   - Hot food is kept at 63 °C to prevent growth of bacteria, as bacteria cannot sur

   Accept any other suitable answers.

Exam-style questions

1. **Max. 3 × AO2 marks** for:
   Any 3 marks from:
   - Store in the fridge at a temperature below 5 °C, i.e. below the danger zone.
   - Do not leave out at room temperatures for periods of time.
   - Ensure they are sealed in airtight containers.
   - Do not use past their use-by dates
   - Store away from raw foods to prevent cross-contamination.

   Accept any other suitable responses.

2. **Max. 2 × AO2 marks** for:
   1 mark for a basic explanation.
   2 marks for detailed explanation.

   Indicative content
   Blanching stops enzymic action because scalding vegetables in boiling water (at 100 denature the proteins that make up enzymes, inhibiting their activity (1).

3. **Max. 8 × AO4 marks** for:

Levelled mark scheme

7–8 marks	• Explanations are accurate and factual • Explanations are justified and related to analyses • Good balance between analysis and explanation • Includes specific and accurate references to the scientific and f microorganisms and enzymes
5–6 marks	• Some accurate analyses are included • Some accurate explanations are included • Includes some references to the scientific and functional prope and enzymes
3–4 marks	• Analyses and explanations a[illegible] • Explanations may b[illegible] to analyses • Includes li[illegible]nces to the scientific and functional pro and [illegible]
1–2 r	• [illegible]mited analyses and explanations • Limited use of factual information • May only analyse or explain effects
0 marks	No answer or no creditworthy answer given.

Indicative content
Analysis
Yeast
- Wild yeast can settle on foods and begin to grow on them.
- Yeast would ferment the sugars in the grapes, producing carbon dioxide and a
- Fermentation would turn the grapes brown and mushy and make them unplea
- The growth of yeast on grapes would make them look unappealing.

Mould
- Mould travels as spores and can settle on food.
- Mould might appear as black spots or fuzzy white gr[illegible] on the grapes.
- Mould can produce toxins or harmful waste [illegible]uc[illegible] that contaminate food a
- The waste products of moulds can ma[illegible]he[illegible]ell, texture, taste and appeara

Bacteria
- Cross-contam[illegible]ca[illegible]transfer bacteria onto foods, e.g. insects attracted to co[illegible]at[illegible]foods or surfaces and then touching the grapes.
- Ph[illegible]ntamination can transfer bacteria onto foods, e.g. waste products f
- Some bacteria produce harmful waste products that can cause illness if eaten.

Enzymes
- Biological catalysts present in many food items.
- Enzymes cause fruit to ripen and become sweeter.
- After extended periods of time, enzymes can cause fruit to overripen, becomi

Controlling effects

Washing

- Removes any wild yeasts or mould spores that have landed on them
- Removes any soil that might be contaminated with bacteria
- Removes any pests, e.g. insects or their eggs, that might contaminate the

Refrigerating

- Slows the reproduction of microorganisms
- Slows the rate of enzymic browning

Using within use-by date

- All foods have a use-by date they should be eaten by
- [illegible] by date, grapes are much more likely to have been contami
- [illegible]ng the grapes past their use-by date gives yeast and mould time to g
- Leaving the grapes past their use-by date gives bacteria time to reproduc harmful waste products

Accept any other suitable responses.

Topic 1: Food spoilage and con

3.4.1.2 Signs of food spoilage

Section A

1. a) **True**
   b) **False** – mould can develop a network of roc[illegible] the surface of food, an[illegible] fruiting bodies.
   c) **False** – oxidation is caused [illegible] reactions in foods when they come int[illegible]
   d) **False** – some mou[illegible] and produce mycotoxins, which can cause p[illegible]
   e) **True**
   f) **Fa**[illegible]ld [illegible]ast will break down and ferment fruit it comes into contact with[illegible]

2. Answers may include:

   Oranges
   - At first, moulds appear white
   - Rapidly change to blue/green as spores develop
   - Toxins may have spread throughout the food as green mould infects fruit thro[illegible] the surface

   Fried chicken
   - Discolouration of meat inside
   - Visible mould growing on surface
   - Sour or musty smell

   Bread
   - Musty smell
   - Green or white fuzz as mould produces fruit[illegible] bod[illegible] on surface of loaf

3. **1** – Mould spores land on food.
   2 – The mould spores bec[illegible]er a mate.
   3 – The mould se[illegible] roots into the food.
   4 – The mould spores send up sh[illegible]
   5 – Fruiting bodies ripen.
   6 – Fruiting bodies burst and rele[illegible]

4. a) Ox[illegible] reaction
   b)

Onions	✓	Grapefruit	
Oranges		Blueberries	
Bananas	✓	Potatoes	✓
Avocados	✓	Grapes	
Raspberries		Apples	✓

Section B

1. a)
   - It occurs when fruit is cut, grated or bruised, as cell walls rupture
   - Enzymes are biological catalysts made from proteins
   - When these enzymes in the cells react with oxygen in the air, oxidation o[illegible]
   - Making the banana go brown in colour

   b) Any three from:
   - When cut, add lemon juice (citric acid [illegible] enzymic browning)
   - Keep plastic wrap on them / [illegible] an airtight container (limiting oxyge[illegible]
   - Put them in the frid[illegible] note the skin may go brown, but the cool[illegible]
   - Keep out of [illegible] sunlight can increase the temperature) / keep in a c[illegible]

   Acc[illegible]ny [illegible]table examples.

2.
   - Ex[illegible]s may include: grapes, strawberries, raspberries, tomatoes, blueberrie[illegible]
   - Wild yeast can grow or settle on fruit
   - Once it does, it starts to grow and will ferment the sugars in the fruit (process[illegible]
   - Breaking down the fruit and producing carbon dioxide and alcohol
   - The fruit will turn mushy and brown as it is fermented

Section C

1. Answers might include:

Bread bin

For

- As a bread bin is explicitly for bread products, there is less chance of the bread from other foods.

Against

- As a bread bin is kept at room temperature, it provides a better environment f
- Mould spores can transfer easily inside a bread bin, so if there is other bread w could contaminate the new loaf.

Freezer

For

- As the bread freezes and is kept below -18 °C, any bacteria or mould on it will be

Against

- …however, if the bread is already contaminated, bacteria will begin growing a
- Freezers contain lots of other food products which may be carrying dormant b transferred to the bread if it isn't stored correctly.

Exam-style questions

1. Award **1** mark for the correct response. **1 × AO1 mark** for:
   c) Roasting potatoes – roasting is a cooking method that causes browning throu the heat from roasting reduces enzymic action.

2. **Max. 4 × AO2 marks** for:
   1 mark for a basic explanation.
   2 marks for a detailed explanation.

   Indicative content
   - Washing thoroughly, to remove any soil that might contain bacteria or mou
   - Blanching vegetables (1) to denature enzymes and prevent browning (1)
   - Adding lemon juice to sliced fruit (1) to denature enzymes and prevent brown
   - Storing perishable fruits, e.g. raspberries, in the fridge (1) to slow the growth o
   - Freezing produce (1) to make bacteria and mould dormant (1)

   Accept any other suitable answers.

Topic 1: Food spoilage and microc

3.4.1.3 Microorganisms in food produc

Section A

1. Blue cheese: **Mould** (accept bacteria as this is also us[illegible]se production)
   Bread: **Yeast**
   Yoghurt: **Bacteria**

2. a)

	production	Why i
	lk is pasteurised.	**Kills pathogenic bacteria.**
2.	**Bacteria culture is added.**	Turns lactose into lactic acid, whi and coagulates proteins.
3.	**Rennet is added.**	Coagulates milk, separating it int
4.	Curds are cut.	**To release as much whey as pos**
5.	**Whey is drained off.**	Needs to be removed for cheese other products, e.g. ricotta.
6.	Curd is dried.	Drains more whey.
7.	Curd is milled.	Creates a better texture in final p
8.	**Cheese is pressed.**	Salt is added for flavour and pres form a solid mass / final product.
9.	Cheese is ripened/matured.	**Bacteria develop texture, colour place to control growth of moul**

   b) Answers may include:
   - Mould spores added with bacteria culture
   - Sprayed onto cheese
   - Cheese is dipped into a liquid [illegible]ining mould spores

   c)
   - Mould is add[illegible]p the flavour and appearance of cheese.
   - [illegible]cia[illegible]re used to form the distinctive patterns of veins in blue c
   - [illegible]e moulds create a distinctive, earthy flavour that many people enjoy
   - [illegible]ing mould to the surface of a cheese also helps it to ripen without ge or bacteria.

Section B

1. Bacteria cultures are added after pasteurisation because the high heats used to steril bacteria cultures as well, preventing them from coagulating the proteins in the milk a

2. The breads are different because yeast makes bread rise, so the bread without yea feeding on sugars in flour or added to the dough, converting them into carbon diox and rise.

Section C

1. Answers might include:
   - Checking packaging and seeing whether the ch[illegible] a b[illegible]e cheese or a soft c contain mould.
   - If the mould is consistent acr[illegible]th[illegible]ghout the cheese, it is likely that it is old and harmful mou[illegible] be[illegible]allowed to grow extensively.
   - If there is on[illegible]p[illegible]ch of mould, it may still be safe to eat if the affected ar[illegible]ar[illegible]moved. This only applies to hard cheeses, such as Parmesan, w th[illegible]moisture content makes it more difficult for mould to germinate on the cheese.
   - Patches of black, white or green mould are most likely to be harmful; cheese v disposed of.

   Accept any other suitable answers.

Exam-style questions

1. **1 × AO1 mark** for:
   Bacteria

2. **Max. 4 × AO2 marks** for:
   1 mark for a basic explanation.
   2 marks for a detailed explanation.

   Indicative content
   - Bacteria are used to thicken yoghurt as they convert lactose into lactic acid to become coagulated (1).
   - Bacteria are used in natural yoghurt (1) as the lactic acid produced gives yoghurt a sharp taste (1).
   - Cooling yoghurt and storing it in the fridge slows bacteria reproduction (1) as the cold does not kill it, giving the yoghurt a longer shelf life (1).

   Accept any other suitable answers.

Topic 1: Food spoilage and con

3.4.1.4 Bacterial contamination

Section A

1. Answers may include:
   - Vomiting
   - Diarrhoea
   - Abdominal pain
   - Fever
   - A[illegible] p[illegible]s
   - Flu[illegible]mptoms
   - Kidney failure
   - High temperature
   - Low temperature

   Accept any other suitable answers.

2. [illegible]rs may include:
   - Unwashed hands
   - Unwashed vegetables
   - Knives used to cut meat
   - Fur, droppings or saliva
   - Insects
   - Chopping boards used to
   - Sneezing or coughing ov
   - Waste or rubbish that ha

   Accept any other suitable ans

3. Cross-contamination is the transfer of harmful substances, e.g. bacteria, from an ob products or between food products.

Section B

1. Food poisoning occurs when harmful bacteria contaminate food and are consumed fission in a person's digestive tract and spread, and symptoms of food poisoning wi destroys all the harmful bacteria.

2. Each box should contain **at least one** answer from:

Bacteria	[illegible]es	Symptom
Staphylococcus a[illegible]	• C[illegible]ok[illegible]meats • [illegible]w milk and dairy products • Handmade foods (transferred by people; hands, mouth, nose)	• Abdominal pain • Low temperature • Nausea • Vomiting
Listeria	• Pâté • Unpasteurised milk and products made with it • Unwashed vegetables	• Flulike symptoms fatigue, high temp • Miscarriages • Convulsions
Campylobacter	• Milk (especially unpasteurised) • Raw meat and poultry • Untreated water	• Abdominal pain • Diarrhoea (bloody • Fever • Nausea
E. coli	• Beef, minced beef • Raw seafood • Unpasteurised milk • Untreated water	• Abdominal pain • Diarrhoea • Fever • Kidney failure
Salmonella	• Raw or undercooked poultry and eggs • Unpasteur[illegible] m[illegible] • Un[illegible]hed [illegible]egetables	• Abdominal pain • Diarrhoea • Fever • Vomiting

3. Answers may include:

Rodents (pests)

- Rodents are small and capable of climbing, so they can access pantries, cupbo
  chew through packaging to get at the food inside.
- They may carry bacteria on their feet or fur, which will contaminate anything t
- They may carry bacteria in their saliva or in their droppings, which will contam

Knives

- If separate knives are not used for raw and cooked food products, they will transfer b
  meat is prepared before using them on other ingredients.
- Cutting unwashed vegetables with a knife can spread bacteria if there is any p
  on

Hands

- Since we do most things with our hands, there is always a chance of pathogen
  under nails.
- As we touch, hold or carry other things, any bacteria on our hands will spread
- We often cough or sneeze into our hands, which will spread bacteria to anything

Accept any other suitable answers.

Section C

1. Answers may include:
   - Using separate knives and chopping boards / work surfaces to prepare raw an
   - Storing raw prawns on the bottom shelf of the fridge to prevent any juices dri
   - Storing cooked prawns in the fridge until ready to use.
   - Washing lettuce to remove any soil, which might be contaminated with bacte
   - Storing mayonnaise in the fridge.
   - Storing lettuce in the crisper drawer at the bottom of the fridge to prevent an
     maintain ideal humidity, preventing spoilage.
   - Storing bread in dry conditions such as in a bread bin, or freezing it if not used
     purchase, preventing growth of mould which could contaminate other foods.

   Accept other suitable answers.

2. Students may consider:

Raw

- Raw fruit and vegetables may be contaminated by bacteria in soil, but thorough
- Non-perishable foods stored outside of a fridge are susceptible to pests, espec
  through cardboard and thin plastic.
- Uncovered foods are susceptible to contamination as insects land on them.
- Foods stored in a fridge are susceptible to contamination from drips or from c
  unless stored properly.
- Raw meat is one of the most common causes of contamination.

Cooked

- Bacteria will be killed by high temperature during cooking, preventing them fr
- Cooked foods, if being stored for an extended period, are still susceptible to c
- Cooked meats in particular are at risk due to the moisture and protein they p
  for bacteria to grow in.
- If left out at room temperature, bacteria will begin to grow again on cooked fo
  covered properly.

Accept other suitable answers.

Exam-style questions

1. Award **1** mark for the correct answer. **1 × AO1 mark** for:
   a) 5–63 °C – this is the temperature range in which bacteria and other microorga most easily.

2. **Max. 6 × AO2 marks** for:

5–6 marks	• Thorough knowledge and under[illegible]g of the causes of food c • Explanations are detail[illegible] and contain examples of both starch • Correct termi[illegible] used.
3–4 marks	• Good knowledge and understanding of the causes of food conta • Explanations are given and at least one example is given. • Correct terminology is sometimes used.
1–2 marks	• Basic knowledge and understanding of the causes of food conta • Explanations are limited and may include no examples. • Use of terminology may be attempted but is incorrect.
0 marks	No answer or no creditworthy answer given.

Indicative content

- Covering food properly so that pests cannot access it – as they may carry bact
- Cooking foods to correct temperatures which will kill bacteria and prevent the
- Storing foods in the fridge or freezer to slow or prevent bacteria growth by ma
- Storing food on the correct shelf in the fridge to prevent contamination from l dripping onto other foods/ingredients.
- Storing foods on shelves or in sturdy containers to prevent pests such as roder
- Using foods within their use-by date to prevent contamination from microorga e.g. weevils in flour.
- Using colour-coded chopping boards and other equi[illegible]t to prevent transfer
- Cooking all food to an internal temperature of 75 °C to ensure all microorganis
- Not leaving food at room tempera[illegible]lo[illegible]ger than four hours – as room te for microorganism growth

Accept any other suitable [illegible]

3. **Max. 1[illegible] marks** for:

10–12 marks	• Detailed explanations with accurate factual information and te • At least four points about the causes of food contamination and • Response shows a good balance between analysis and evaluati • Analysis is excellent and evaluation uses sound judgements to • Response is specific to the scenario.
7–9 marks	• Some detailed explanations with accurate factual information • At least three points about the causes of food contamination an • Response may favour either analysis or evaluation. • Analysis is good and evaluation is used for some judgements a • Response is mostly specific to the scenario.
4–6 marks	• Limited explanations with some factual information that shows • At least two points about the causes of [illegible]d contamination and • There is an imbalance betwe[illegible]a[illegible]s and evaluation, with g • Analysis covers at leas[illegible]o[illegible]ors and evaluation is used to m to analysis • Res[illegible]e[illegible]x of generic points and points specific to the s
1–3 r[illegible]	• [illegible]se is very limited with few explanations that are not su • Only one factor is analysed and any evaluation is limited. • Response uses generic points without reference to the scenari
0 marks	No answer or no creditworthy answer given.

Indicative content

Analysis

Temperature

- Chicken could have been left at room temperature for too long before using
- Mayonnaise could have been opened and left at room temperature for too lo
- Salad wasn't stored in the fridge until serving
- The fridge the dish was stored in was above 5 °C
- Dish was kept at room temperature for longer th ar ours at the dinner p

Contamination

- Cos lettuce may carry ami a soil
- Insects could h r esent on the cos lettuce and carrying pathogenic ba
- Cr ta ion could have occurred if another dish contained pathogeni wu to serve both dishes
- A person carrying pathogenic bacteria on their skin or in their mouth/nose cou the dish through touch or by coughing/sneezing

Preparation

- Chicken could be undercooked
- Cos lettuce wasn't washed properly, leaving insects or soil on the leaves
- Mouldy bread used for croutons

Accept any other suitable responses.

Control measures

Temperature

- Ensuring fridge temperatures are between 0 °C and 5 °C to slow reproduction
- Ensuring chicken reached an internal temperature of 75 °C when cooked
- Cooking chicken at home rather than buying ready-to-eat chicken, which may temperatures
- Keeping salad in the fridge up until the p in it n s to be served
- Disposing of salad if it has been le at room temperature for longer than f

Contamination

- St aw the bottom of the fridge to prevent juices from dripping o
- Co d securely to prevent pests, e.g. insects, from accessing it
- Usi individual serving utensils for different dishes
- Portioning out dishes instead of letting people take what they like at a buffet

Preparation

- Using colour-coded chopping boards for high-risk and low-risk ingredients, e.g
- Washing salad thoroughly to remove any dust, dirt or insects
- Checking bread for mould before making croutons
- Checking chicken for any signs of spoilage, e.g. an 'off' smell or discolouration

Accept any other suitable responses.

Topic 2: Principles of food

3.4.2.1 Buying and storing food

Section A

1. Answers may include:

Top shelf

- Ready-made and ready-to-eat foods should be stored on the top shelf where t
  or contaminated.
- Examples of cooked foods, e.g. cooked meats or leftover meals.

Second shelf

- Ready-made and cooked foods can also be stored on this shelf, above and sep
- Examples: dairy products (e.g. cheese, milk, yoghurt, cream)

Bottom shelf

- Raw meat and fish should be placed on the bottom shelf of the fridge to preve
  and contaminating it.
- It is the coldest part of the fridge and you want raw meat and fish to be kept a
- It should be well wrapped to prevent leaks and reduce cross-contamination.
- Examples: raw beef, raw chicken, raw fish

Drawers

- Perishable fruits and vegetables should be stored in the drawers, which help r
  the ideal humidity.
- Foods should be covered or wrapped to prevent any drip or contamination fr
  raw meat).
- The drawers do not touch the back of the fridge, less chance of any product
  the process.
- Fruit and vegetables should be washed and dried to remove dust, soil and bac
- Any examples of fruit/vegetables suitable for fridge temperatures, e.g. blueb
  fr bs.

Door

- Liquids should be stored upright to prevent leakage or spillage.
- Foods with preservatives should be stored here as it is the least cold part of th
- Examples: condiments, fruit juices, jam (after opening)

Freezer drawers

- Food should be tightly wrapped and covered to prevent freezer burn.
- Foods should be labelled with the date they are put in the freezer and their ne
  extended by freezing.
- Stock should be rotated so that most recent items go at the back of the drawe
- Any examples of food suitable for freezing. Must be frozen immediately or by

2. The food danger zone is the range of temperatures betwe hich bacteria grow m
   Temperatures below this cause microorganisms t or do mant and stop repro
   will kill most microorganisms.

3.

Method	Temperature (°C)
Chilling in fridge	0 °C to below 5 °C
Boiling in water	100 °C
Freezing	-18 °C (or lower)
Cooking foods	75 °C (or above)
Cooling before refrigeration	8 °C (or lower)
Reheating leftovers	At least 75

4. Answers may include:

Steaks

- Fat is creamy white, not discoloured
- Flesh is bright red and not greying anywhere
- Flesh is firm and not mushy

Carrots

- Carrots are firm with no soft spots
- No mould or discolouration on skin
- No sour smell

Fish

- Eyes are bright and shiny
- Flesh is firm, not mushy
- No overpowering fishy smell

Accept other suitable answers.

Section B

1. Answers may include:

Worktops

- To prevent pests from accessing the food – for example, flies could land on un from their feet onto it, and could even lay eggs in the food.
- To prevent physical contamination from objects falling into the food – for exam ne[illegible] h[illegible] drops onto it.

Fridge

- Food can absorb odours so if it is not properly covered it will either taint other by other, stronger smells in the fridge.
- If a food is still warm when refrigerated, covering it will prevent steam from es the fridge will be less affected.
- To prevent liquid from other ingredients dripping onto food – especially juice f bacterial contamination if it comes into contact with other food.

Freezer

- Wrapping food tightly in the freezer prevents it from freezer burn, which creat as ice crystals form and food loses water content.
- Chilled food being added to the freezer can still drip or contain bacteria, so foo to prevent contamination.

2.
- The 'best before' date is the date until which food is at its best quality; after th discoloured but will still be safe to eat.
- The 'use-by' date is the date by which food should be used; after this date the by microorganisms and will no longer be safe to eat.

3. Ambient storage means storing non-perishable foods at room temperature, with te

Section C

1. Answers may include:
   - Frozen foods will start to defrost; as they warm up, any bacteria present will b reproduce and multiply, leading to the food spoiling more quickly.
   - Dairy will curdle as bacteria become more active and produce more lactic acid
   - Lower-risk foods such as vegetables will last, but they may wilt more quickly in
   - High-risk foods will be at increased risk of spoilage as b eria multiply in warm

   Accept any other suitable answers.

2. Students might consider:
   - Bacteria become do at lower temperatures and reproduce more slowly, microorgani h on the chilled leftovers, making them safe to eat cold.
   - If eh food properly, it should reach 75 °C at its core and stay at that wi e that all bacteria on the food are killed, making the food safe to eat.
   - Food stored improperly in the fridge is at risk of contamination from drips or f reheating the food to kill any bacteria will ensure any contamination is resolve
   - If the leftovers contain meat, they should be reheated as meat is a high-risk fo
   - If the leftovers are vegan or vegetarian, they should be safe to eat cold as they

   Accept any other suitable answers.

Exam-style questions

1. Award **1** mark for the correct response. **1 × AO1 mark** for:
   b) 0–5 °C – below 5 °C, the growth and reproduction of bacteria and other micro high-risk foods from spoiling too quickly.

2. **Max. 2 × AO2 marks** for:
   1 mark for a basic explanation.
   2 marks for a detailed explanation.

   Indicative content
   Freezing
   - The freezer should b C or lower to ensure food is completely frozen and
   - Wrap food ti rotect it from freezer burn, which occurs when food oxidis

   Cookin
   - Food should reach 75 °C at its thickest part as bacteria cannot survive tempera
   - For rare meat, meat should be properly browned and sealed on the outside, w

   Reheating
   - Food should be reheated to 75 °C and remain at that temperature for two min way through and all bacteria are killed.
   - Only reheat food once – allowing it to pass through the danger zone multiple t multiply, and they may not all be killed by high temperatures.

   Accept any other suitable answers.

3. **Max. 8 × AO4 marks** for:

7–8 marks	• Explanations are accurate and factual • Explanations are justified and related to analyses • Good balance between analysis and explanation • Includes specific and accurate references to the scientific and f microorganisms and enzymes
5–6 marks	• Some accurate analyses are inclu e • Some accurate explan ns r included • Includes som e s to the scientific and functional prope and s es
3–4 n	• es and explanations are limited • Explanations may be linked to analyses • Includes limited references to the scientific and functional pro and enzymes
1–2 marks	• Very limited analyses and explanations • Limited use of factual information • May only analyse or explain effects
0 marks	No answer or no creditworthy answer given

Indicative content

Buying

- Quality checks should be made for all ingredients to ensure there are no signs o
- Meat should be checked for discolouration, e.g. greying flesh or yellowing fat
- Vegetables should be checked for bruising or signs of pests, e.g. worms
- Packaging should be checked for damage, e.g. broken seals
- All ingredients should be within their use-by or best before dates – if an ingred should be checked thoroughly for any signs of spoila
- Soft herbs should be checked for discolourat
- Mushy textures in most ingredient ig spoilage, e.g. vegetables and
- The shop that the ingredie om should be checked for signs of pests,
- Fridge and freeze es in shop should be checked – -18 °C or lower f

Storing

- Hig oods, e.g. dairy and meat, should be stored at 0–5 °C in the fridge
- High-risk foods, e.g. dairy and meat, should be stored at -18 °C or lower in the
- Vegetables should be stored at room temperature away from direct sunlight
- Salads should be kept in the drawers of the fridge, at 0–5 °C
- Raw meat should be stored on the bottom shelf of the fridge to prevent meat
- Ready-to-use ingredients should be stored at the top of the fridge
- Grains should be stored on shelves so rodents cannot reach them
- Dried products should be stored in sealed containers that rodents can't chew
- Food with the most recent use-by date should be stored at the front to ensure use-by date

Accept any other suitable responses.

Topic 2: Principles of food

3.4.2.2 Preparing, cooking and serving

Section A

1. Answers may include:
   - No jewellery
   - No false nails or nail varnish
   - Wear an apron to avoid cont[illegible] clothes and food
   - Wash hands frequ[illegible]
   - No snee[illegible]
   - No touc[illegible]
   - Use brig[illegible]

   Accept any other [illegible] answers.

2. - Th[illegible] should be wiped and sterilised before use.
   - The [illegible]be should then be inserted into the thickest part of the meat or other [illegible] cook through.
   - The probe should not go all the way through the food or touch the pan, as this
   - The probe should be washed and sterilised after use.

3. a) **False** – Food should be cooled to room temperature first, otherwise the steam temperature in the rest of the fridge.
   b) **False** – Food can also be contaminated by chemicals, allergens and physical ob and bones.
   c) **False** – Hands should be washed frequently; for example, after touching meat, handling raw eggs and after handling any chemicals.
   d) **False** – Stock should be rotated so that the oldest ingredients are used first, as by dates and should be used first to reduce unnecessary waste.
   e) **True**

Section B

1. Answers may include:

   Defrosting
   - Food should be defrosted i[illegible]r in cold water. Defrosting food at roo defrost unevenly a[illegible]e or smaller pieces will defrost more quickly and, will be mor[illegible] microorganism growth.
   - Fo[illegible]uld be defrosted quickly in the microwave and cooked immediately. of[illegible]d into the danger zone, where microorganisms can grow much more

   Reheating
   - Food should only be reheated once. Allowing it to pass through the danger zo increases the risk of microorganism growth.
   - Food should be reheated all the way through to 75 °C to ensure any microorga

   Accept other suitable answers.

2. Answers may include:
   - Using colour-coded chopping boards, which will prevent cross-contamination prepared separately on different surfaces.
   - Hands should be washed between handling different ingredients, particularly contamination from bacteria on hands.
   - Washing equipment in warm soapy water as this will detach any bacteria from the drain.
   - Raw and cooked foods should be stored separat[illegible]es as this will preve or from drips.
   - Plasters should be brightly colour[illegible] makes them stand out if they fall i used as blue is a colour no[illegible]d naturally in foods.)

3. Students may co[illegible]
   - Ch[illegible] n[illegible] to wash their hands more frequently as they are touching the to[illegible] serving dishes.
   - Neither should wear dangling jewellery that might fall into food.
   - Both should avoid wearing strongly scented perfume or aftershave, as this ca
   - Only chefs will be handling raw food, so they need to consider cross-contamin equipment and food items, while waiters only need to transport food.
   - Both should avoid touching their faces and coughing or sneezing around food.

   Accept any other suitable answers.

Section C

1. Answers may include:
   - Each time food is cooled and reheated, harmful bacteria will multiply.
   - e.g. harmful spores found in starchy foods, especially rice, will not be killed by
   - As the food is cooked it goes above the danger zone, but as it sits it passes thr
   - The steam also creates a humid, moist atmosphere.
   - Bacteria grow rapidly in warm, moist conditions in time
   - Some heat-resistant bacteria may not be killed
   - The food may have been contaminated by pests such as insects, which might s
   - Food has been left to stand at room temperature, which would allow microorg more quickly.
   - Food could have been contaminated by anyone coughing or sneezing in the

   Accept other suitable answers.

2. Students might consider:

   Preparing
   - Use colour-coded chopping boards for different ingredients.
   - Wash hands after handling any high-risk ingredients.
   - Cover foods properly to prevent contamination by pests, drips or contact with

   Cooking
   - Food should be cooked to 75 °C at its thickest point.
   - Use a food temperature probe to check the temperature of foods.

   Serving
   - Food should be served immediately.
   - Food being hot held should be kept at 63 °C.
   - Foods should not be left to stand at room temperature for more than four hou

   Accept any other suitable answers.

Exam-style questions

1. Award **1** mark for the correct response: **1 × AO1 mark** for:

   b) Inserted into the thickest part of the meat – this is because it takes the longe

2. **Max. 6 marks** for:

5–6 marks	• Thorough knowledge and understanding of personal hygiene a Explanations are detailed and contain examples of both starch • Correct terminology is used.
3–4 marks	• Good knowledge and understanding of personal hygiene and its • Explanations are given and at least one example is given. • Correct terminology is sometimes used.
1–2 marks	• Basic knowledge and understanding of personal hygiene and its • Explanations are limited and may include no examples. • Use of terminology may be attempted but is incorrect.
0 marks	No answer or no creditworthy answer given.

Indicative content

Personal hygiene
- Washing hands frequently
- Washing hands after handling high-risk ingredients, e.g. raw meat
- Washing hands after coughing or sneezing
- Wearing correct personal protective equipment (PPE), e.g. gloves, face masks,
- Wearing different footwear inside and outside the kitchen
- Removing jewellery, especially dangling jewellery, e.g. charm bracelets
- Using blue plasters to cover cuts on hands
- Not wearing perfume or cologne
- Keeping hair / facial hair short, or tying back long hair

Effect on food safety

- Not washing hands thoroughly and frequently increases the risk of transferrin *aureus* from sneezing or *salmonella* from raw chicken.
- Gloves prevent bacteria being transferred from skin to food.
- Face masks prevent contamination from facial hair or droplets from mouth/no
- Hairnets prevent contamination from hair dipping or falling into food.
- Not wearing outdoor shoes into the kitchen prevents bacteria or physical cont being transferred from shoes or soil/manure on
- Blue plasters stand out in food as blue is a colour that rarely occurs naturally i
- Dangling jewellery can carry bacteria and fall into food, which can lead to tooth

Accept any other suitable responses.

3. Max. 12 marks – **12 marks / 6 × AO4 marks** for:

10–12 marks	• Detailed explanations with accurate factual information and te • At least four points about food safety risks and how to prevent t • Response shows a good balance between analysis and evaluat • Analysis is excellent and evaluation uses sound judgements to • Response is specific to the scenario.
7–9 marks	• Some detailed explanations with accurate factual information • At least three points about food safety risks and how to prevent • Response may favour either analysis or evaluation. • Analysis is good and evaluation is used for some judgements a • Response is mostly specific to the scenario.
4–6 marks	• Limited explanations with some factual information that shows • At least two points about food safety risks and how to prevent t • There is an imbalance between analysis and evaluation, with g • Analysis covers at least two factors and evaluation is used to m to analysis. • Response is a mix of generic points and points specific to the sc
1–3 marks	• Response is basic with few explanations that are not sup • Only one factor is analysed and any evaluation is limited. • Response uses generic points without reference to the scenari
0 m	No answer or no creditworthy answer given.

Indicative content

Risks

- Many people have access to the buffet, and they may cough or sneeze on it or
- Many people will be using equipment and utensils, allowing bacteria to spread foods or areas in the hotel.
- Hot holding is used for a lot of buffet food; if the food is not heated to the pro to grow and multiply in the food as the temperature is not high enough to kill
- Food may not be covered, allowing pests – flies in particular – to access and co
- Different foods are stored close together, and if there is mould present on any easily between food items.
- Some customers may use their hands to pick up food, potentially transferring or pick up and put back.

Prevention

- Food should be adequately covered to prevent pests from accessing it.
- Cooked food should not be kept at room temperature for longer than four hou
- Food that is being hot held should be kept at 63 °C or above to prevent microo
- Food should not be hot held for longer than two hours.
- Cooked food should be cooked to 75 °C to kill any microorganisms present on
- Equipment should be cleaned thoroughly and replaced regularly.
- Guests should be encouraged to use tongs to transfer the food from the buffe
- Guests should be encouraged to choose their food swiftly and without crowdi

Accept other suitable answers.