



# 1.4 Food safety in hospitality and catering

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## 1.4.3 Preventative control measures of food-induced ill health



## 1.4.3 Preventative control measures of food-induced ill health

Learners should know and understand the control measures to prevent food-induced ill health:

- Cross contamination
- Correct temperature in delivery, storage, preparation and service
- Physical contamination

# 1.4.3 Preventative control measures of food-induced ill health

## Food contamination

- There are **four** main types of contamination:

### Biological



### Chemical



### Allergenic



### Physical



- All food is at risk of contamination from these four types.** This is why food handlers have a legal responsibility to ensure that the food they prepare is free from these contaminants and safe for the consumer.
- Food contamination is dangerous. The consequences of eating contaminated food range from sickness all the way to death. Because of this, it is critical that you understand what the four types of contamination are and how you can prevent them from affecting the safety of food.

# 1.4.3 Preventive measures of food-induced ill health

## Food contamination

Biological contamination refers to food that is contaminated by micro-organisms or substances they produce.

Chemical contamination is food that has been contaminated with chemicals. The contaminants are

Allergenic contamination occurs when a food item comes in contact with another food item that causes an allergic reaction. This can happen when the same food item is used in different ways. For example, bread is there or if pasta is served.

Physical contamination is when a foreign object contaminates food. This can happen at any stage of the production.

Physical contamination can cause injury to an individual who inadvertently consumes the foreign object.

- Bacteria
- Viruses
- Parasites
- Moulds
- Pesticides
- Processing chemicals
- Drug residue

- Nuts
- Dairy
- Eggs
- Soya

- 
- Naturally present*
    - Bones
    - Pits
    - Bugs
  - Handling materials*
    - Glass
    - Metal
    - Hair

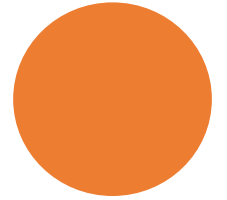
## 1.4.3 Preventative control measures of food-induced ill health

### Cross contamination

#### ACTIVITY

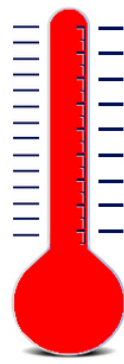
Write a definition for cross contamination.

The process by which bacteria or other micro-organisms are unintentionally transferred from one substance or object to another, with harmful effect, for example food poisoning.

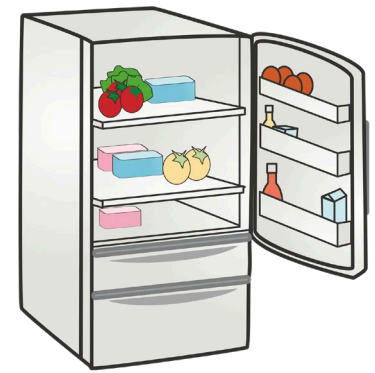




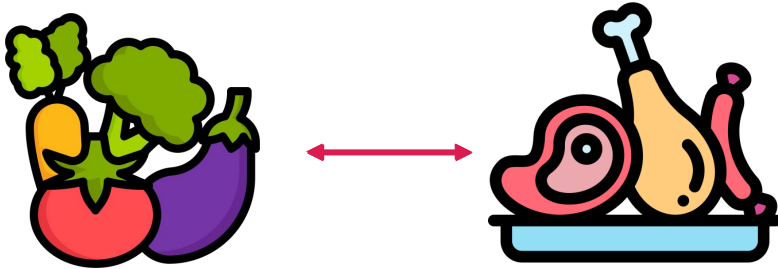
Thoroughly wash fruit and vegetables



Cook to the right temperature



Store raw meat at the bottom of the fridge



Keep raw and ready to eat foods separate

### 1.4.3 Preventative control measures of food-induced ill health

#### Preventing cross contamination

Hospitality provisions can prevent cross-contamination by following several hygiene rules in the kitchen.

#### ACTIVITY

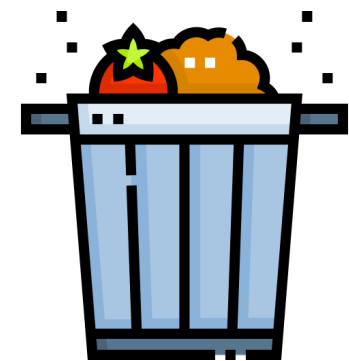
State why each of these hygiene rules should be followed.



Check 'best before' and 'use by' dates



Wash hands and surfaces often



If in doubt throw it out



**GREEN – SALAD AND FRUIT**



**YELLOW – COOKED MEAT**



**RED – RAW MEAT**



# 1.4.3 Preventative control measures of food-induced ill health

## Preventing cross contamination

Using colour coded chopping boards and separate knives for different ingredients can prevent cross contamination.

### ACTIVITY

.....  
Match the ingredient to the correct colour chopping board it should be prepared on.

- Bakery and dairy
- Salad and fruit
- Cooked meat
- Vegetables
- Raw meat
- Raw fish

**BROWN – VEGETABLES**



**BLUE – RAW FISH**



**WHITE – BAKERY AND DAIRY**





## 1.4.3 Preventative control measures of food-induced ill health

### Preventing cross contamination – good hygiene

Hygiene is all about keeping things **clean**.

To make sure our food is safe and clean to eat, we need to store, prepare, cook and serve hygienically.

Good food hygiene practice includes:

- good personal hygiene
- good kitchen hygiene
- careful buying and storing of food
- safe preparation of food, thorough cooking and hygienic service.



# 1.4.3 Preventative control measures of food-induced ill health

## Preventing cross contamination – good hygiene

Personal hygiene



Involves keeping all parts of the external body clean and healthy



Washing hands

Kitchen hygiene



Centres around cleaning procedures that are followed in the kitchen to ensure it is kept clean



Wiping surfaces

Buying and storing of food



Where you buy the ingredients/food from and how/where you store them



Milk should be stored in the fridge

Safe preparation, cooking and serving



Procedures you follow when preparing, cooking and serving food



Colour coded chopping boards

### Chef's hat

To protect the food from **physical contamination**, for example hair. It will also absorb the sweat.



### Long hair tied back

To protect the food from **physical contamination**, for example hair.



### No smoking around food

The ash and smoke can contaminate the food.



### Chef should be in good health

Chefs should not cough or sneeze over food and should not work with food for 48 hours after the last episode of sickness and/or diarrhoea, as the viruses can be passed on to customers.



### Daily shower or bath

To prevent body odour and help maintain a clear complexion.



### Fingernails should be short and clean

To protect the food from bacteria that can be under the nails – **biological contamination**. Chefs should not wear false nails or nail varnish to protect the food from **physical contamination**.



### No jewellery

To protect the food from **physical contamination**.



### Chef whites should be clean

To protect the food from **biological contamination**.



### Hands should be washed

To protect the food from **biological contamination**, for example bacteria. Hands should be washed regularly.

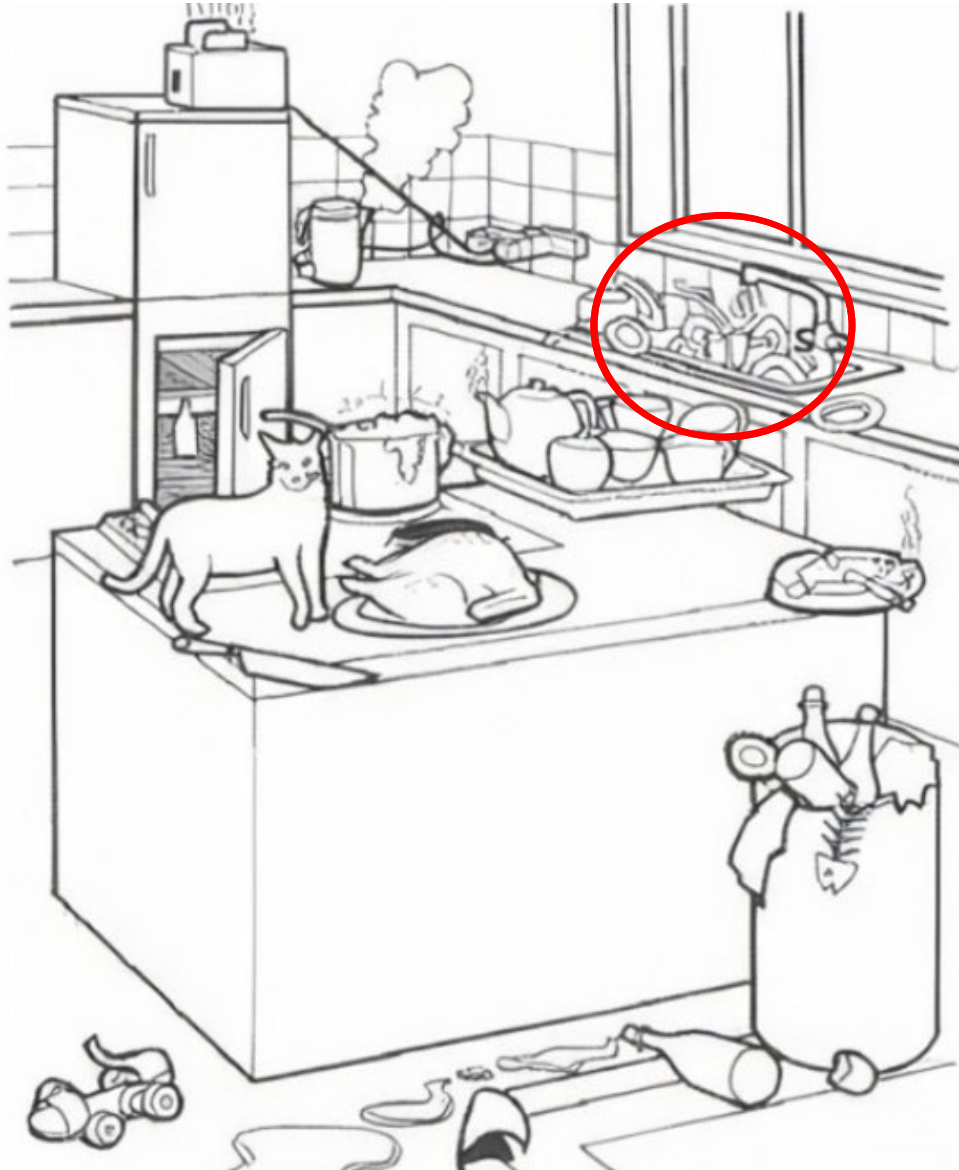
## 1.4.3 Preventative control measures of food-induced ill health

### Kitchen hygiene

#### ACTIVITY

Identify the hygiene hazards in the kitchen and state why they are an issue. The first one has been done for you.

Hygiene hazard	Reason
Dirty dishes left in the sink	Bacteria can grow on the dishes and cross contaminate





## 1.4.3 Preventative control measures of food-induced ill health

### Physical contamination – pests

- Pests are a source of food contamination and are a major hazard to a food business. Pests may contaminate foods with hair, fur, droppings, eggs and dead bodies.
- Food premises attract pests because they provide food, warmth, shelter and moisture.
- Pests sometimes enter premises in food packaging, so it is important to check packaging on delivery. Pests cause a lot of damage (gnaw pipes, wires and buildings) and can result in a loss of custom and profits.

# 1.4.3 Preventative control measures of food-induced ill health

## Preventing pests

Three kinds of pests are commonly found in places where food is prepared, eaten or stored. These are:



Rodents



Insects

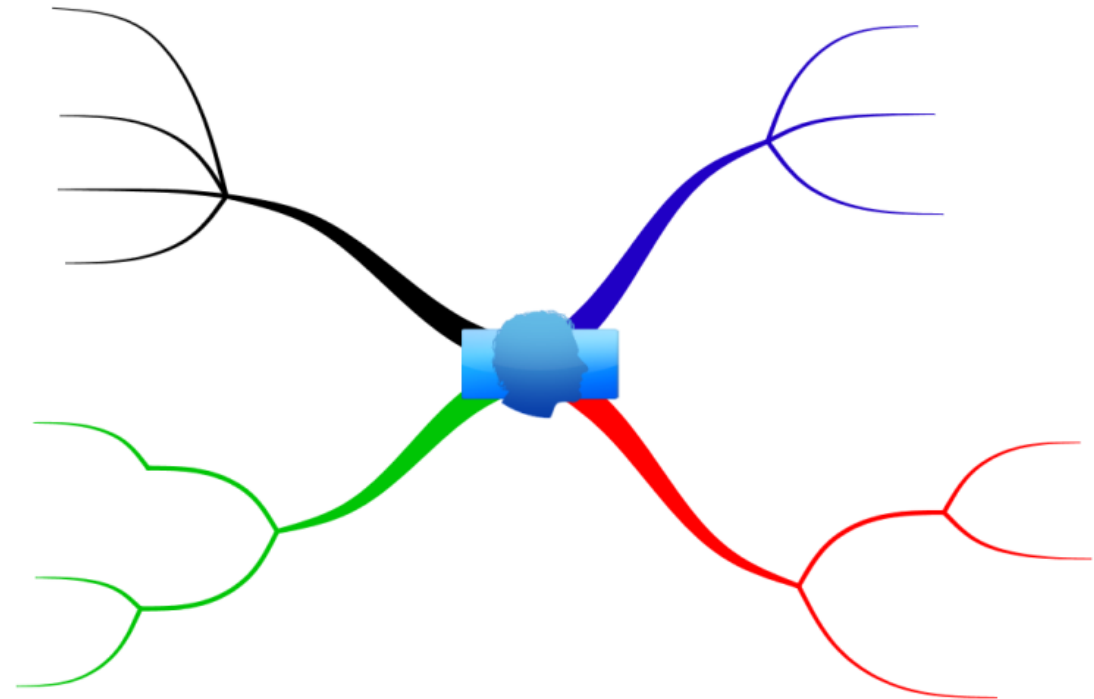


Birds

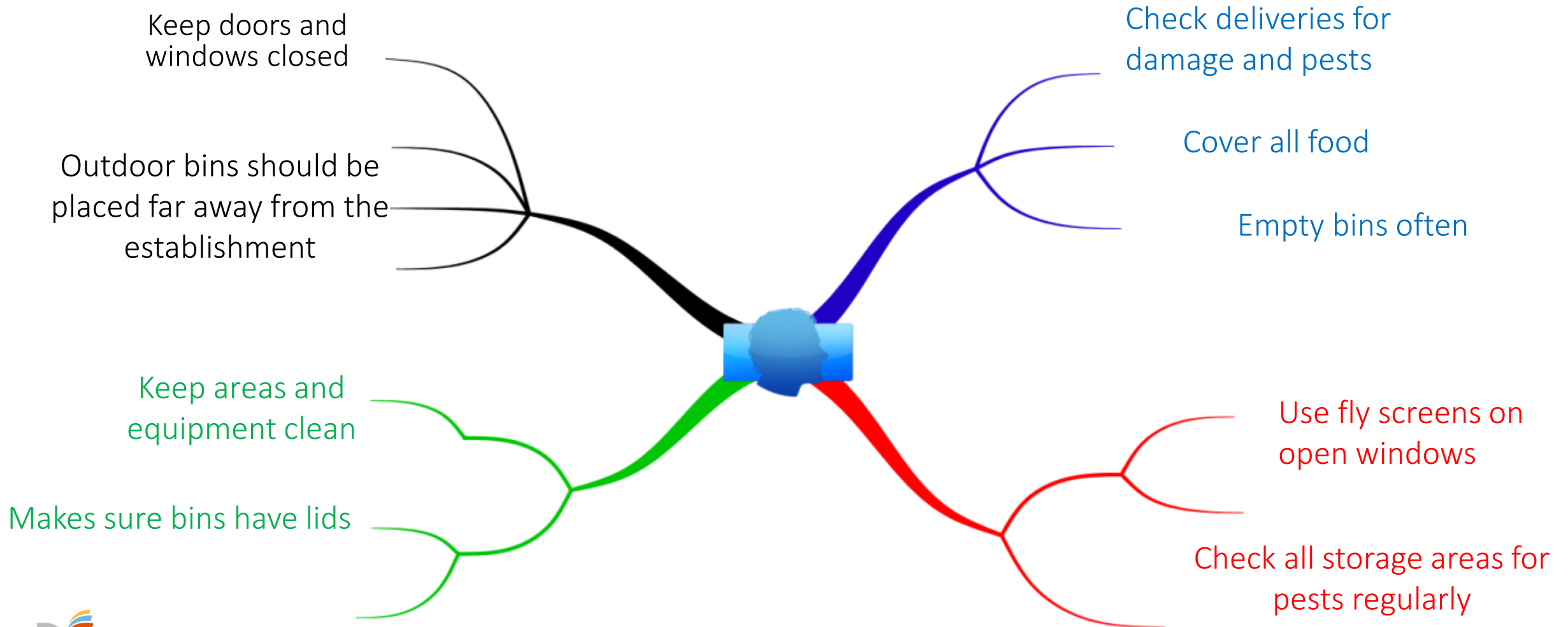
### ACTIVITY

.....  
Pests need food, warmth and shelter to survive. These need to be denied to prevent the risk of a pest invasion.

Brainstorm ways to prevent a pest infestation in a catering provision.



# 1.4.3 Preventative control measures of food-induced ill health





## 1.4.3 Preventative control measures of food-induced ill health

### Physical contamination – pests

D	N	I	B	B	L	E	D	P	F	E
R	W	R	A	P	P	I	N	G	K	O
O	S	T	D	E	G	A	M	A	S	D
P	A	R	E	P	R	O	B	L	L	D
P	D	E	A	D	P	E	S	T	N	S
I	N	A	C	I	T	A	M	E	E	M
N	F	O	O	D	D	A	M	A	G	E
G	E	S	D	E	B	R	I	S	T	L
S	O	F	U	A	C	R	O	J	O	L
D	O	O	F	D	E	K	R	A	M	M

### ACTIVITY

.....  
If an establishment has an infestation of pests, there will be several signs to show they are present.

Find the signs that pests are present in the word search.

D .....

M ..... F.....

D..... P.....

O ..... S .....

D .....

N ..... W .....

F ..... D .....

Gnaw marks on woodwork

## 1.4.3 Preventative control measures of food-induced ill health

### Physical contamination – pests

D	N	I	B	B	L	E	D	P	F	E
R	W	R	A	P	P	I	N	G	K	O
O	S	T	D	E	G	A	M	A	S	D
P	A	R	E	P	R	O	B	L	L	D
P	D	E	A	D	P	E	S	T	N	S
I	N	A	C	I	T	A	M	E	E	M
N	F	O	O	D	D	A	M	A	G	E
G	E	S	D	E	B	R	I	S	T	L
S	O	F	U	A	C	R	O	J	O	L
D	O	O	F	D	E	K	R	A	M	M

### ACTIVITY

.....  
If an establishment has an infestation of pests, there will be several signs to show they are present.

Find the signs that pests are present in the word search.

Droppings

Marked food

Dead pest

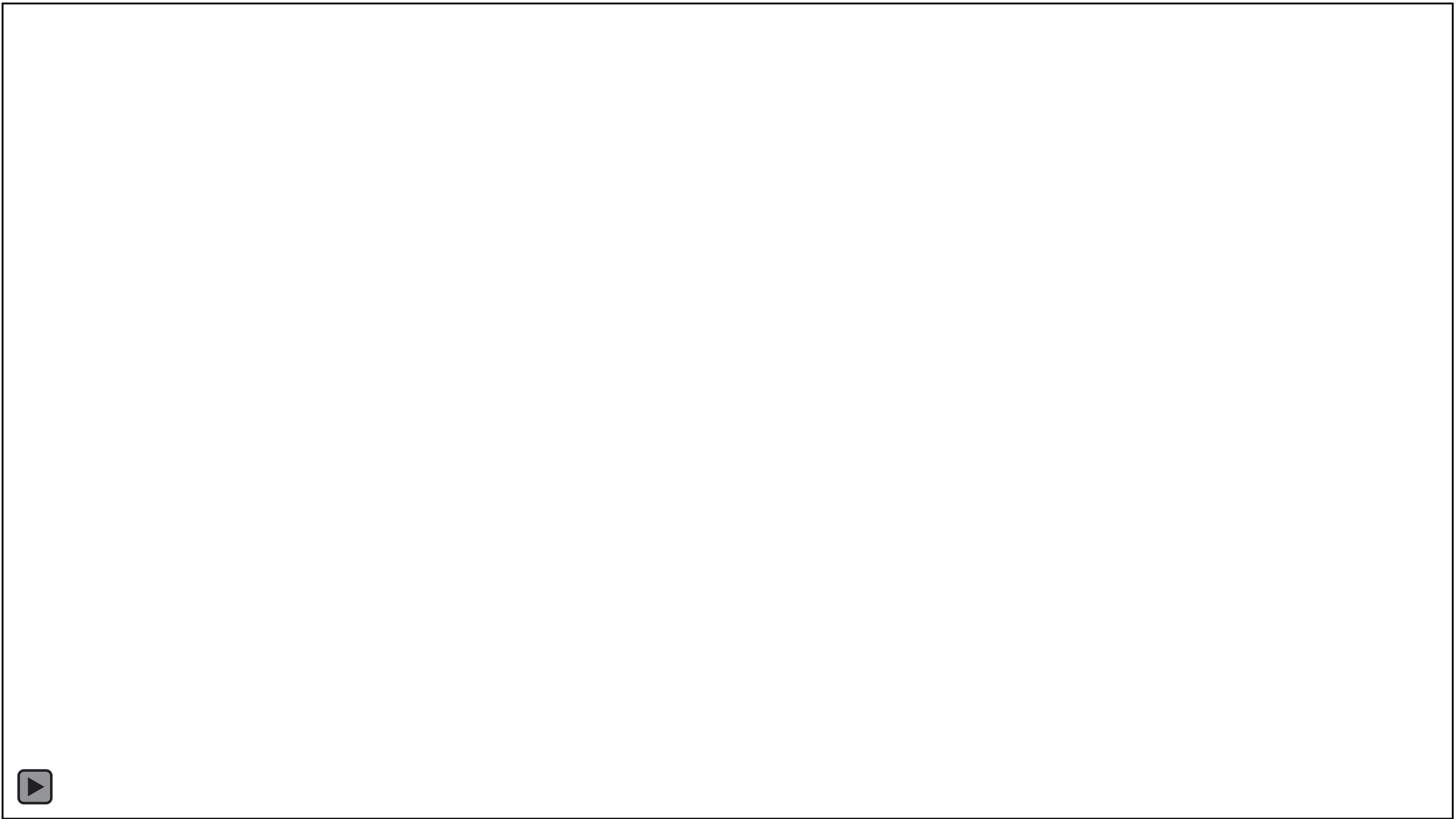
Odd smell

Debris

Nibbled wrapping

Food damage

Gnaw marks on woodwork



5 Keys to Food Safety / Have a Safe Meal / Food Safety & Hygiene Academy of the Philippines (youtube.com)

# 1.4.3 Preventative control measures of food-induced ill health

## Using correct temperatures in delivery, storage, preparation and service of food

As well as following good hygiene practices, it is also important that the hospitality and catering provisions receive, store, prepare and serve food at the correct temperatures to avoid causing ill health.

Key hygiene practices that must be followed include:

- using a temperature probe to check the core temperature of foods
- keeping foods out of the **danger zone** (the temperature at which bacteria can multiply)
- checking food deliveries for damage and correct temperature
- labelling foods, with chilled and frozen foods being stored away first
- storing raw meats and cooked goods separately or, if this is not possible, covering and storing raw meats at the bottom of the fridge
- checking storage temperatures regularly.

# 1.4.3 Preventative control measures of food-induced ill health

Using correct temperatures in delivery, storage, preparation and service of food

## ACTIVITY

.....  
Match the temperatures to the correct description and label the thermometer.

Descriptions	Temperatures
Core temperature	Between 2°C and 5°C
Fridge	-18°C or below
Hot holding	Between 8°C and 60°C
Freezer	63°C or above
Danger zone	70°C for two minutes or 75°C for 30 seconds

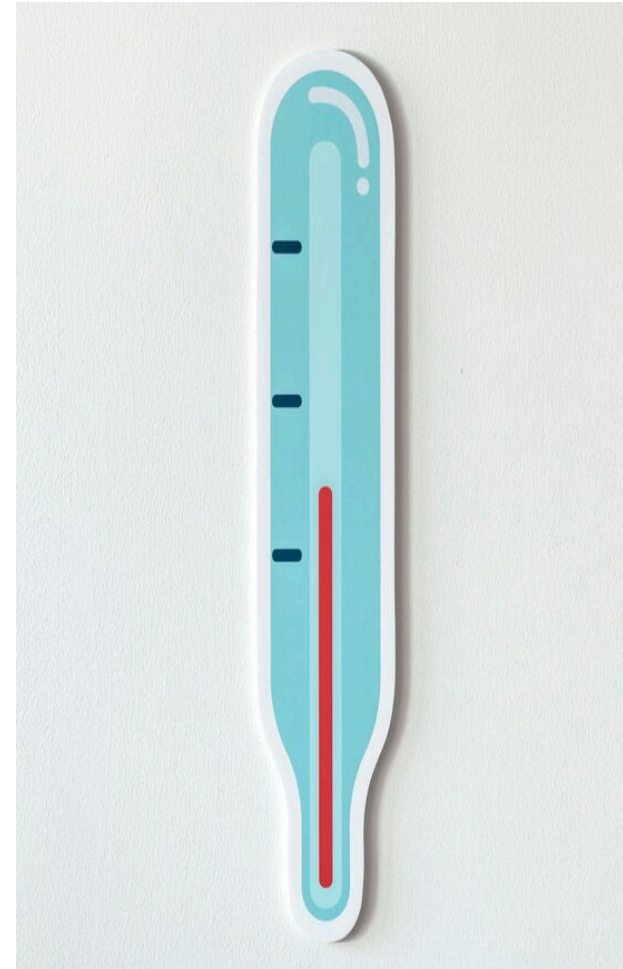
## 1.4.3 Preventative control measures of food-induced ill health

Using correct temperatures in delivery, storage, preparation and service of food

**Core temperature**  
70°C for two minutes or  
75°C for 30 seconds

**Danger zone**  
Between 8°C and  
60°C

**Freezer**  
-18°C or below



**Hot holding**  
63°C or above

**Fridge**  
Between 2°C  
and 5°C



## STARTER/PLENARY ACTIVITY

Three kinds of pests are commonly found in places where food is prepared, eaten or stored. Unscramble the letters below to name the pests.



### Rodents

CMIE

.....

TRAS

.....



### Insects

FILES

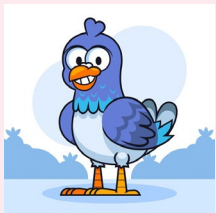
.....

RCOACCHKOES

.....

TNAS

.....



### Birds

GPIONES

.....

GMAIPSE

.....

RRPSAWOS

.....

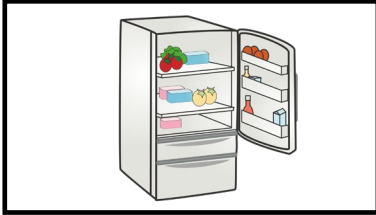
GLAESULS

.....

## STARTER/PLENNARY ACTIVITY

.....  
**Instructions:** Using the pictures as prompts, fill in as much knowledge as you can about how and why it is linked to hygiene.

### Topic: Hygiene



## STARTER/PLENARY ACTIVITY

**Instructions:** Read through the definitions below and figure out what the key word is.

**Challenge:** Explain how the word is relevant to what we have studied.

Key word	Definition
	The temperature range where food is most at risk of developing harmful bacteria.
	The internal temperature high-risk food must meet to kill bacteria.
	Food containing inedible objects, such as metal or plastic.
	Food contaminated with the unwanted presence of micro-organisms, such as bacteria and viruses, which can lead to illnesses when consumed.
	The process by which bacteria or other micro-organisms are unintentionally transferred from one substance or object to another, with harmful effect, for example food poisoning.
	Maintaining the temperature of hot food so it remains safe to eat.

## STARTER/PLENARY ACTIVITY

**Instructions:** Look at the **three** words, then identify which **one** is the **odd one out**.

**Challenge:** Explain how the two words are connected.

### Topic: Hygiene


1	Rodent	Insect	Dog
2	Red	Pink	Blue
3	Wipe surfaces	Wash hands	Tie hair back
4	Change bins regularly	Do not run in the kitchen	Use colour coded chopping boards
5	Do not wear jewellery in the kitchen	Thoroughly wash fruit and vegetables	Store raw meat on the bottom shelf of a fridge
6	Bacteria	Viruses	Blue plaster

## STARTER/PLENARY ACTIVITY

.....  
**Instructions:** Draw a table in your book. You have **three** minutes to recall as much information on **cross contamination** as you can.

### Topic: Cross contamination

Information I can recall...	Information I have 'stolen' from my peers



As we discuss with the class, fill this column with any new information.

## STARTER/PLENARY ACTIVITY

Instructions: Write the answers to the questions in the boxes below. One answer per box

### Topic: Hygiene

#### Questions:

1. Write down **one** colour chopping board and its use.
2. Suggest **two** ways to prevent cross contamination.
3. State **three** key temperatures used in the kitchen.
4. List **four** personal hygiene rules.

Q1				
Q2				
Q3				
Q4				



## STARTER/PLENARY ACTIVITY

### PAST PAPER QUESTION

Within food safety legisla

State **three** food hygiene

1. ....

2. ....

3. ....

State **3** food hygiene rules that must be followed during food preparation.

Award 0 marks. No response or quality of response not sufficient.

**Award 1** mark for each correct hygiene rule to be followed in food preparation.

#### Indicative content

- Colour coded chopping boards
- Colour coded tongs
- Different areas of preparation for raw and cooked meats
- Using food probe to check temperatures
- Correct storage of raw meat and cooked foods
- Blue plaster to be used to cover cuts
- Check dates of foods being used
- Check smell/appearance of food being used
- Personal hygiene
- Wash fruit and vegetables

## STARTER/PLENARY ACTIVITY

### PAST PAPER QUESTION

(b) Tick (✓) the box next to the statement to show which is true or false.

[4]

Statement	True	False
(i) Raw meat should always be stored at the top of a fridge.		✓
(ii) Raw meat should always be stored at the bottom of a fridge.	✓	
(iii) You can die from food poisoning.	✓	
(iv) Food can be "hot held" for 6 hours.		✓

## STARTER/PLENARY ACTIVITY

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### PAST PAPER QUESTION

- (c) Discuss ways in which a school cook can prevent food poisoning when preparing, cooking and displaying foods for the hot counter. [8]

The answer could include reference to the following points:

- Store foods at correct temperatures (chilled foods under 5°C, frozen food under -18°C)
- Defrost frozen foods thoroughly before cooking
- Keep food cool, clean and covered
- Prepare food as close to cooking or serving time as possible
- Avoid cross-contamination
- Use colour coded boards and knives
- Separate raw and cooked food
- Wash fresh fruit and vegetables before use
- Check use by and best before dates
- Prepare food on clean surfaces
- Cook foods at a high enough temperature and for a long enough time to kill bacteria Above 70°C – 75°C
- Serve food above 63°C (check regularly)
- Use a temperature probe to check core temperatures
- Sanitise equipment and surfaces regularly
- Adopt a clean-as-you-go routine
- Do not serve reheated food to high-risk groups
- Clean food display frequently during service
- Use different serving equipment for all foods
- Ensure sneeze guards, etc. are in place and cleaned regularly
- Ensure high standards of personal hygiene for all staff

## STARTER/PLENARY ACTIVITY

### PAST PAPER QUESTION

Temperature control is essential to control bacterial growth.

Match the correct temperature to the statements below.

[3]

**A** 100°C

**B** -18°C

**C** 75°C

**D** 0°C

**E** 5°C

For example, if you think the answer for (i) is **A** write **A** in the box.

(i) The core temperature of cooked food.

**C**

(ii) The temperature of a freezer.

**B**

(iii) The temperature of boiling water.

**A**

## STARTER/PLENARY ACTIVITY

### PAST PAPER QUESTION

(a) **Award 1 mark for each** correct answer

(b) **Award 1 mark for either**

**NB: temperatures must be given at this stage**

Answers could include:

- All high risk food stored in fridge 5<sup>0</sup>C
- All frozen food stored in a freezer – 18<sup>0</sup>C
- All ambient food stored in cupboards
- Every surface cleaned and sanitised before and after use
- Coloured boards used to prevent cross contamination
- All food cooked to core temperature of 75<sup>0</sup>C
- Food to be kept outside the danger zone 8-63<sup>0</sup>C
- Van must be free of any pests/regular checks must be carried out
- Personal hygiene – accept any points for 1 mark
- Separate utensils to avoid cross-contamination
- Food in date
- Keep raw and cooked separate cross-contamination
- 63<sup>0</sup>C "hot held food"
- Keep hot and cold separate
- Hand wash sink
- Keep all food covered
- Remove waste regularly/covered bin

- Food/Temperature probe
- Food/meat thermometer

## STARTER/PLENARY ACTIVITY

### PAST PAPER QUESTION

Tick [✓] the box next to each statement to show if it is **true** or **false**.

[3]

	TRUE	FALSE
(i) Hot food should be placed in a refrigerator to cool.		✓
(ii) The rule for food stores is 'first in - first out'.	✓	
(iii) After washing hands, they should be dried on a tea towel.		✓



## STARTER/PLENARY ACTIVITY

### PAST PAPER QUESTION

**Award 1 mark for each** correct answer.

- G Answers must relate to personal hygiene and **not** food or kitchen hygiene. (3) risk of  
fo [3]
- Wash hands before handling food
  - (i) • Wash hands after going to toilet, blowing nose, handling raw food, changing foods, handling rubbish, etc. ....
  - Jewellery should not be worn, no make up etc. ....
  - Nails should be short and clean (no nail varnish, extensions, etc.)
  - (i) • Cuts, burns and sores should be covered with waterproof dressings
  - Food handlers with skin, nose, throat or bowel problems should not work with food
  - Wear protective clothing e.g. 'whites' ....
  - Cover hair with a hat / tie long hair back
  - (ii) • Food handlers must not smoke in food rooms
  - Food handlers should not cough or sneeze over food
  - Food handlers should not touch nose, mouth or hair when preparing food
  - Wear protective gloves where applicable



# Glossary

# B

**Biological contamination** – food contaminated with the unwanted presence of micro-organisms, such as bacteria and viruses, which can lead to illnesses when consumed.



# Glossary

# D

**Danger zone** – the temperature range where food is most at risk of developing harmful bacteria.



# Glossary

# C

**Core temperature** – the internal temperature high-risk food must meet to kill bacteria.



# Glossary

# H

**Hot holding** – maintaining the temperature of hot food so it remains safe to eat.



# Glossary

P

**Physical contamination** – food containing inedible objects such as metal or plastic.



# Acknowledgements

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