

Food Year 8 Homework Booklet

Name:	
Teacher:	
Form & Group:	

- This book is your property, if you lose it you must buy a new one
- Bring it to each lesson

My teacher is going to test me on all of my homework at the start of each lesson. For my technical knowledge I need to know:

- How to spell the word correctly
- What the meaning is
- How and where it is used



Online textbook - <u>http://www.illuminate.digital/aqafood/</u> Student Username: STURTON3 Student Password: STUDENT3

Health and Safety

Food Poisoning

Food poisoning is a very common and unpleasant illness, it can lead to some serious health complications in some people.

Micro-Organisms that make food unsafe to eat and cause food poisoning are called pathogens.

There are many different pathogenic bacteria, moulds and yeasts.

Bacteria most commonly cause food poisoning.



Read and Learn

The most Vulnerable are: Food poisoning is dangerous for babies and young children, pregnant women, elderly people and those who have a weak immune system

Most pathogenic bacteria cause food poisoning inside the digestive system. Symptoms include:

The symptoms of food poisoning can include:



- bad abdominal pain (stomach ache)
- diarrhoea

- nausea
 - (feeling sick)
 - vomiting (being sick)



dizziness



- a raised body temperature
- feeling cold and shivery

Key Term Re-Cap



Create mini revision blocks with the following **key terms**. Using your prior knowledge to fill in the definitions and examples.

Bacteria	Cross Contamination	Pathogenic Bacteria
Definition	Definition	Definition
Example	Example	Example
Non-Pathogenic Bacteria	Danger Zone	Key Terms
Definition	Definition	 Bacteria Cross-Contamination Pathogenic Bacteria Non-Pathogenic Bacteria
Example	<u>Example</u>	Danger Zone

The Causes of Food Poisoning

Watch the short *BBC Teach clip on 'The Causes of Food Poisoning*'. You will need to recall for this activity.

https://www.bbc.co.uk/teach/class-clips-video/design-and-technology-gcse-the-causes-of-food-poisoning/zftkjhv

1	Name four pathogens that cause food poisoning	1. 2.	
		3. 4.	
2	What are the four conditions required for bacterial growth?	1. 2.	
		3. 4.	
3	The Danger Zone is where bacteria multiply rapidly. What temperature is that?		
4	To prevent food poisoning, which four Cs must be carried out?	1. 2.	
		3. 4.	
5	Tick which temperature range destroys bacteria	(a) Freezing b) Chilling c)Heat
6	What is the minimum temperature food should be reheated to?		
Mar	ks: out of 15		Completed



Symptoms of Food Poisoning

Using the word bank, sort the symptoms a person experiencing food poisoning may have into the table into **non-visible** and **visible**. Complete the crossword by using the clues.

Possible Symptoms

- Headache
- Diarrhoea
- Weakness
- Feeling cold and shivery
- Loss of appetite
- Dizziness

- High body temperatureNausea (feeling sick)
- Abdominal pain
 - Vomiting (being sick)
 - Aching muscles

Complete the table below

Non-Visible Symptoms	Visible Symptoms		



Across

3. There are two types of bacteria, this kind is the type that does not causes food poisoning.

Down

- 1. The temperature range where bacteria can thrive and multiply.
- 2. There are two types of bacteria, this kind is the type that causes food poisoning.
- 3. A symptom of food poisoning, feeling sick.

Danger Zone

Review your learning and answer the questions, some of the information you may need is on the thermometer below.



Topic Test 1

Revise the previous homeworks about food poisoning to prepare for a test in lesson. Do not fill this test in at home.



Potatoes - The UK's favourite staple food

Read and highlight key facts about potatoes, then answer the questions below.

1. Who cultivated the first potatoes?

2. Who was Sir Walter Raleigh and what is his link to potatoes?

3. With regards to potatoes, what happened in 1840? How did it impact the Irish?

4. What year did NASA grow a potato in space?

5. Why did NASA grow a potato in space?

The potato is the world's fourth largest food crop, following rice, wheat, and maize.

The Inca Indians in Peru were the first to cultivate potatoes around 8,000 BC to 5,000 B.C.

In 1536 the Spanish conquered Peru, discovered the flavors of the potato, and carried them to Europe. Before the end of the sixteenth century, families of Basque sailors began to cultivate potatoes along the Biscay coast of northern Spain.

Sir Walter Raleigh introduced potatoes to Ireland in 1589 on the 40,000 acres of land near Cork. It took nearly four decades for the

potato to spread to the rest of Europe.

UNITED

KINGDOM

Sir

Bay of Biscav

Walter Raleigh



Eventually, agriculturalists in Europe found potatoes easier to grow and cultivate than other staple crops, such as wheat and oats.

In the 1840s a major outbreak of potato blight, a plant disease, swept through Europe, wiping out the potato crop in many countries.

The Irish working class lived largely on potatoes and when the blight reached Ireland, their main staple food disappeared. This famine left many povertystricken families with no choice but to struggle to survive or emigrate out of Ireland.

Over the course of the famine, almost one million people died from starvation or disease. Another one million people left Ireland, mostly for Canada and the United States.

In October 1995, the potato became the first vegetable to be grown in space. NASA created the technology with the goal of feeding astronauts on long space voyages, and eventually, feeding future space colonies.

Heat and Energy Transfer

Using the online textbook pages 85-88 produce a mind map. The login details are shown at the bottom of the page and front cover. *You should complete your mind map on the next page*

Using the online textbook pages 85-88, you are required to produce a mind map on the reasons we cook food and the three methods of heat transfer:

- Convection
- Conduction
- Radiation

Convection

•Heat moves through gases and liquids by convection currents

•Oven: They are heated by convection currents: the hot air rises making the oven hotter at the top and cooler at the bottom, producing different **zones of heat**.

 Hob: When boiling vegetables in a pan of water, the water expands and rises as its heated. The cooler water sinks to the bottom of the pan and the process is repeated until the pan is at boiling point.

Conduction

•Heat is conducted through molecules in solids and liquids

• When a saucepan is placed on a cooker or source of heat, it heats up. As it heats up, the molecules in the metal start to vibrate.

•If the saucepan has water in it, the molecules in the water vibrate faster and heat up. Metals and water are good conductors of heat, but wood, plastic and cotton are poor conductors.

Radiation

• Heating by radiation takes place when heat is transferred directly onto food by infra-red rays from the heat source.

• Good examples of cooking by radiation are toasting bread in a toaster or cooking sausages under a grill.



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Heat and Energy Transfer – Mind Map

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Bread Making

Write a short news report on bread making. Your report should explain how each ingredient helps to create the final product. You have been given the function of ingredients in the table below. You can attach a piece of paper if you need more room.

 Ingredient	Function
Strong Flour	Provides Bulk. Contains Gluten which allows the dough to stretch. Gluten chains hold the air bubbles in
Yeast	Reacts with sugar and water to produce CO2 and alcohol: makes the air bubbles in bread
Water	Activates the yeast and binds the other ingredients
Fat	Increases shelf life and improves texture, (softens)
Sugar	Feeds the yeast, adds flavour and colour
Salt	Inhibits the yeast and adds flavour. Strengthens the gluten in the flour
	Completed

Numeracy

Complete the numeracy questions below and show your working out.

1. A portion of pasta is 75g. How many grams of pasta would you need to cook for a family of four?

2. A pack of 8 tangerines cost £1.60, how much is each piece of fruit?

3. A recipe states you need 150g of milk chocolate. Packs of 100g are 38p. What is the cost of 150g of chocolate?

4.A recipe to make lasagne for 6 people uses 300 grams of minced beef. How much minced beef would be needed to serve 8 people?

Cheese - Key Terms and Definitions

Using the key terms on the next page, you should cut out each one and match to the correct definition. ***You will find the page you need at the back of your book***
 Stick over the correct meaning as a flap, so it can be lifted. Do not stick it all down.

a soft, white semi solid formed when milk coagulates	A traditional English blue cheese using a special mould to give it its distinctive flavour and colour	Stored for a few weeks/months to develop the flavour, texture and colour of the cheese, in carefully controlled conditions	A micro organism that is harmful to humans and can cause food poisoning	Makes the cheese become a solid block	An enzyme added in cheese making to coagulate the milk (separate the curds and whey).
a hard, smooth cheese, made from cows milk and varying in color from white to deep yellow and in flavor from mild to sharp as it ages.	the watery part of milk that remains after the formation of curds.	A micro organism that is not harmful to humans and does not cause food poisoning	cause (a fluid) to change to a solid or semi-solid state.	This means heating fresh milk to 72°C for 15 seconds in order to kill pathogenic micro organisms that may be in it	is the process of breaking down the fat molecules in milk so that they stay integrated rather than separating as cream.

Gelatinisation Using the online textbook read about the process of gelatinisation, *pages 117-119*, write down the correct order.



Roux Sauce

Using your knowledge of gelatinisation, fill in the missing gaps and explain the process of gelatinisation.

We use ______ to help thicken a roux sauce. It will help thicken the macaroni cheese

because it contains a high amount of ______ in it. We add flour to thicken the

liquid, when we ______ the liquid it will thicken. This is called ______. It is

important that you _____ the liquid, this will stop _____ forming in your sauce.

Lumps - gelatinisation - heat - Flour - starch - Stir

Completed

Match the correct temperature to the stages in the process of gelatinisation.

60°C	Starch granules are swollen so that they burst, releasing starch molecules into the liquid
80°C	Sauce becomes completely thickened
100°C	Starch molecules start to absorb the liquid which causes them to swell

Revision

Using your notes revise for your Topic Test 2

For this topic test you will need to revise the following points:

- Temperature danger zone
- Enzymes & micro organisms
- Bacteria
- Enzymic Browning
- Fresh Milk Treatments

Topic Test 2

Revise the previous homeworks about food poisoning to prepare for a test in lesson. **Do not fill this test in at home.**

- 1. What is the temperature of the danger zone?
- 2. Enzymes are proteins. Bacteria are micro-organisms which most commonly cause food poisoning. *True/False* (1 mark)
- 3. Enzymes can cause the destruction of certain nutrients, for example vitamins. This is known as oxidation. *True/False* (1 mark)
- 4. Micro-organisms can have positive uses. Match the micro-organism and the food product.

(3 marks)

(1 mark)

Bacteria	Bread
Mould	Blue cheese
Yeast	Probiotic yogurt

5. Enzymic browning is the discolouration of fruit or vegetables due to a reaction from oxygen from the air within the plant cell. (3 marks)

Match up the statements related to enzymic browning.

Adding acid to a fruit salad Placing peeled potatoes in cold water Leaving a banana in a fruit bowl for several days Sweetens the flavour Prevents them from reacting with oxygen in the air Prevents it from browning

 6. Heat treatment of fresh milk to 72°C for 15 seconds is known as what? a) Ultra Heat Treatment b) Sterilisation 	(1 mark)
c) Pasteurisation d) Homogenisation	Completed

Pastry

Mind map the **nine** different types of pastry. Add **two** or **three** different products that relate to each type. We have given you an example below.



Pastry

Review your learning and answer the questions, some of the information you may need is on the thermometer below.

flour waterproof Extra information particle Fill in the missing words in the paragraphs below. fat layer and videos can be found in the online textbook on pages 130-131 waterproof Food Preparat and Nutrition fat layer short gluten molecule Fats are rubbed into flour to make pastry The fat coats the flour particles with a waterproof layer When water is added, the gluten strands can only form short lengths because of the waterproof fat The texture of the pastry is 'short' and tender

<u>Shortening</u>			
Shortcrust pastry,	and		
rely on fat to give the	m their characteristic _		
texture.			
The	coats the flour partie	cles and	
prevents them from a	bsorbing	This	
reduces the formation	n of		
development, which would cause the dough to become			
	Fats such as pure	vegetable fats	
are suitable for shorte	ening because of their		
water content. There	are distinctive colours	associated with	
the type of fat used, f	or example, butter pro	duces a	
	colour		

Year 8 Knowl	edge Organiser		
Hygiene	To prepare food in a clean way to stop food spoilage or poisoning occurring		
Cross contamination	The transfer of food spoilage/poisoning from one food to another		
Food Provenance	Where foods and ingredients originally come from		
Food security	The ability of people to buy sufficient safe, nutritious and affordable food		
Sustainability	Producing food in a way that can be maintained over a long period of time and protects the environment		
Food Miles	More food is being transported by air & driven by lorries. This creates food miles, carbon footprint, food waste		
Cheese Making Curds are separated from the liquid whey by coagulating milk, curds are then used in the cheese making process Rennet is used to help separate the milk into curds and whey and to help set the cheese When cheese is made, there are two types of micro- organisms used – bacteria and moulds Non-pathogenic bacteria does not cause food			

poisoning and is used in a variety of food products such as cheese.

Milk is pasteurised, this sterilisation process starts to irradiate pathogenic bacteria, heating to 72°c makes milk safe to drink

Online textbook

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Sustainability & Environment



Fairtrade promotes better prices, decent working conditions, local sustainability, and

fair terms of trade for farmers and workers in developing

countries. Red Tractor covers: Animal welfare, food safety, traceability and

environmental protection.

Experts check that food is farmed and prepared to a good standard.



Fairtrade

 Red Tractor
 Soil
 Association
 Freedom food
 W

Carbon footprint
 Sustainability

Food miles

Animal welfare

Packaging

Food labels are used to show different things, they protect the consumer and manufacturer by giving certain information by law:

- Name and description of food product

 Name and address of food manufacturer distributor

 Place of origin of food How to prepare and cook the product
 Allergy warnings
 Additives information
 Shelf-life, use-by and best before dates

Bacterial Contamination

- Micro-Organisms that make food unsafe to eat and cause food poisoning are called pathogens.
- Danger zone 5°c to 63°c
- Fridge temp: 0c to 5c
- Freezer temp: -18°c to -24°c

 Re-heat/ cook raw food to at least 75°c to kill bacteria

Key Terms

Pathogens, Non-pathogens, Danger zone, Bacteria

Wheat into Flour

Stage 1: Harvest

0.

When the wheat grains ripen, combine harvesters are used to cut the plants and separate the grains from the rest of the plant.

Stage 2: Cleaning and storage

The wheat grains are then cleaned and stored until they are ready to be milled. Stage 3: Milling the grain to produce flour The wheat grains are then cleaned and stored until they are ready to be milled. The main nutrients are held under the aleurone and bran layers. The germ is responsible for the reproduction of the grain if it were to be planted and grown again.



Food Spoilage

Enzymes cause foods like fruit to ripen, change the texture, alter the flavour and alter the smell

Yeast targets foods that contain a high amount of sugar. They settle on food, grow, ferment the sugar e.g. in fruit. Enzymic browning can be prevented by

cooking, putting the food into cold water, adding acid like lemon or orange juice and blanching





Cheese - Key Terms and Definitions

Using scissors, cut alone the cut lines and carefully trim each square. These can then be stuck over the key term definitions.

Pasteurisation	Pressing the cheese	Coagulates	Non- Pathogenic	Ripening the cheese	Curds
Rennet	Pathogenic	Homogenised	Whey	Stilton	Cheddar

