

# Food Preparation and Nutrition GCSE Revision 2019



Name:	
Target Grade:	
<b>Examination (1 <math>\frac{3}{4}</math> hours)</b>	
Section A Multiple choice questions (20 marks)	Section B Five questions each with a number of sub questions (80 marks)

# Revision check list

- Macro Nutrients
- Micro Nutrients
- Nutritional Groups
- Cooking methods
- Chemical & Functional properties
- Food spoilage & contamination
- Food safety
- Food choices
- British & International cuisines
- Sensory Evaluations
- Environment
- Sustainability
- Food production
- Food processes

# Macro Nutrients

Complete the table below.

Nutrient		Food sources	Main functions	Notes
Macronutrients				
Carbohydrate	Sugars			
	Starch			
Protein				
Fat	Saturated			
	Unsaturated			

# Micro Nutrients

Nutrient	Food sources	Main functions	Notes
Micronutrients - vitamins			
Vitamin A			
Vitamin D			
The B Vitamins			
Vitamin C			
Micronutrients - minerals			
Calcium			
Iron			
Sodium			

# Nutrition

Nutrient	Function in the body	Deficiency	Food source
Carbohydrate (Starch, sugar & dietary fibre)			
Fat Saturated & Unsaturated			
Protein HBV & LBV			
Vitamin A			
Vitamin D			
Vitamin E			
Vitamin K			
B group B1 (thiamin), B2 (riboflavin), B3 (niacin), folic acid, B12			
Vitamin C			

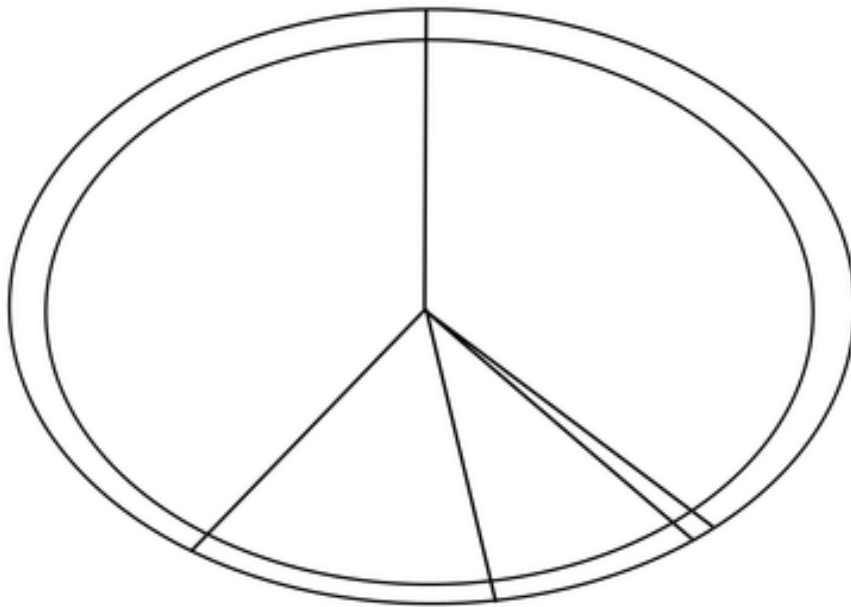
## Nutrition

Nutrient	Function in the body	Deficiency	Food source
<b>Minerals</b>			
Calcium			
Iron			
Sodium (salt)			
Flouride			
Iodine			
Phosphorus			
<b>Important Non-nutrients</b>			
Water			

## Eat well guide

Explain what the Eat well guide is and why it helps towards a balanced diet.

Fill in the Eatwell guide with the name, nutrients and food examples:



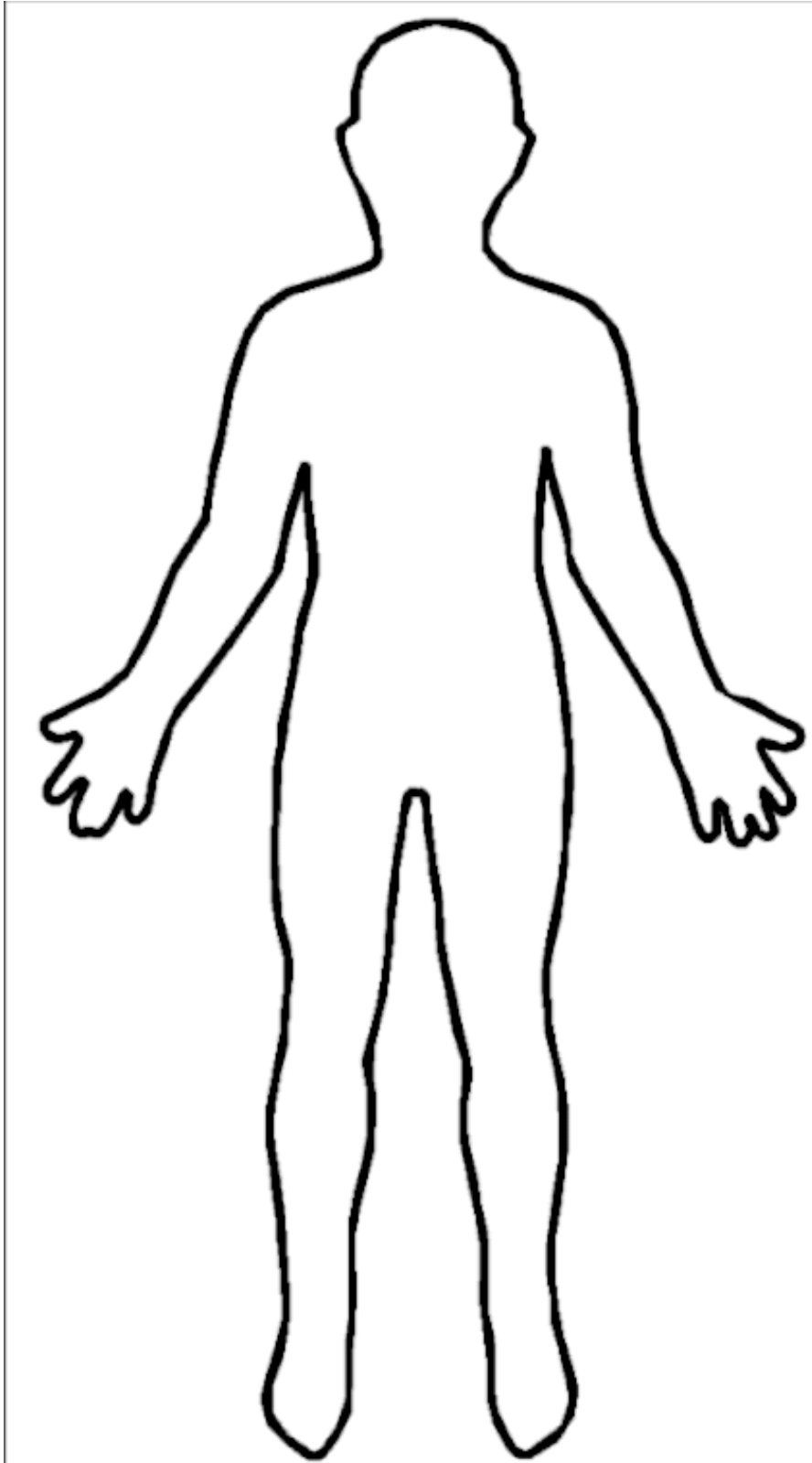
List the 8 tips to healthy eating?

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.

## Eat well guide

Food contains essential nutrients for your body to live on.

Label the body with what nutrients give to your body.





## nutrition

An unbalanced diet can cause various health problems. Match the problem with what nutrients you would need to eat more of and the food that you find it in.

Anaemia

Calcium

Wholewheat bread

Split nails

Iron

Fruit and Vegetables

Constipation

Vitamin C

Red meat

Regular colds

Fibre

Dairy products

---

Some people have to follow a special diet for health reasons. What are the reasons that the following groups of people can't eat the named food?

Pregnant women can't eat shellfish and raw eggs.

Celiac can't eat gluten.

Lactose intolerance can't have dairy.

Diabetics have to control their sugar.

Children under five can't have nuts

Dietary need	Description	Key points	Nutritional needs	Foods to eat	Foods to avoid
Babies	Age 0-2	Breast milk or formula provides most nutrients until 6 months. Avoid food high in salt, fat and sugar.			
Young children	Age 2-12	Meals should not just be smaller versions of adult meals.			
Teenagers	Age 13-19	Girls, more weight conscious than boys, usually consume fewer calories, therefore are more prone to nutritional deficiencies.			
Adults	Age 20-65	Balanced diet following eatwell guide.			
Elderly people	Age 65 +	They should be careful not to over eat as they may become fat if they are not very active.			
Invalids	Often recovering from illness, an operation, accident or injury.	People may be bedridden so foods must take this into account.			
Dietary need	Description	Key points	Nutritional needs	Foods to eat	Foods to avoid
Vegetarians	People who do not eat a full range of meat, fish, poultry or animal products.	Lactose vegetarians who eat no animal flesh but do eat animal products Demi or semi vegetarians sometimes do eat white meat and do eat animal products Vegans eat no animal flesh or products			
Religion	People whose religious beliefs prevent them from eating specific foods.	The caterer must be aware of different <u>religions</u> needs for preparation, cooking and serving of food e.g. <u>halal</u> and <u>kosher</u>			
Medical / health related diets	People with a medical condition that affects the foods they can eat (including allergies below)	Diabetes Obesity Heart disease Low fat, salt or sugar diet High fibre diet			
Allergies	People who cannot specific foods as they have an allergic reaction. People may also have an intolerance which stops people eating specific foods.	Common allergies and are nuts, fish, shellfish, eggs, soya and sesame seeds. Common intolerances are gluten and lactose. New allergen law December 2014.			

## Life stages

Peoples' nutritional needs change throughout life. You need to be able to plan a balanced diet for different life stages.

Special Diet	An explanation of diet and changes which need to be made when following the diet
Young children (2-5 yrs)	
Children (5-12 yrs)	
Teenagers	
Adults	
Elderly	

## Special dietary needs

Some people have to follow a special diet because...

1. They may need to lose weight
2. They have an illness that needs to be controlled, by what they eat.
3. Certain foods make them ill, so they have to avoid eating them

Special Diet	An explanation of diet and changes which need to be made when following the diet
Vegetarian	
Vegan	
Coeliac disease	
Lactose intolerant	
High fibre diets.	
Low calorie diets	

# Health

Explain how diet can affect health and how nutritional needs change in relation to:

Diet related health risk	Explanation
Obesity	
Cardiovascular health (coronary heart disease (CHD) and high blood pressure)	
Bone health (rickets and osteoporosis)	
Dental health	
Iron deficiency anaemia	
Type 2 diabetes	

## Cooking methods

Name 4 reasons for cooking food

---

---

---

---

### Food is cooked by heat energy - Methods of heat transfer

The three ways that heat energy can be passed through food are:

- convection
- conduction
- radiation.

Describe each method - use diagrams if necessary

The selection of appropriate preparation and cooking methods can conserve or modify nutritive value or improve palatability:

Give examples of different cooking methods for each method

Water based:

Dry methods:

Fat based:

**Method of cooking****Method of heat transfer****Examples of suitable foods****Methods using moisture to transfer heat****Boiling** – cooking food in water at 100°C

Conduction → Convection

Eggs, rice, pasta, vegetables (e.g. carrots, potatoes, swede), joints of meat, such as gammon (e.g. bacon/ham), beans, peas, lentils, vegetable or meat stock

**Braising** – searing meat in hot fat, then cooking it slowly in a covered dish with a little liquid

Conduction → Convection

Meat, poultry, vegetables (e.g. carrots, fennel, red cabbage), tagines

**Poaching** – cooking food in a shallow pan of water or wine at just under boiling point

Conduction → Convection

Fish, eggs, fruit (e.g. pears, cherries, plums, apricots, peaches)

**Simmering** – cooking food in a liquid just below boiling point, so it bubbles gently

Conduction → Convection

Vegetables, soups, stews, fruit (e.g. apples), meat sauces (e.g. Bolognese sauce), curries, fish chowder (chunky soup)

**Steaming** – cooking food in the steam rising from a pan of boiling water beneath

Conduction → Convection

Green vegetables (e.g. broccoli, spinach, cabbage, Brussels sprouts), white fish, sponge puddings, dim sum dumplings, rice

**Stewing** – cooking food by simmering gently in a covered pot either in the oven, on the hob or in a slow cooker

Conduction → Convection

Meat, poultry, sausages, casseroles, fruit (e.g. apples, plums, rhubarb), tofu

**Method of cooking****Method of heat transfer****Examples of suitable foods****Methods using dry heat to transfer heat energy**

**Baking** – cooking foods in a hot oven



Convection → Conduction

Cakes, breads, biscuits, cookies, scones, pastries, potatoes, pizzas

**Grilling** – cooking foods by intense radiant heat on a metal grid or grill rack, underneath a heated grill element in a cooker or above the glowing charcoal/flames in a barbeque



Radiation

Meat and poultry joints, fish, sausages, burgers, toppings for au gratin dishes (e.g. cheese sauce), halloumi cheese, tomatoes

**Toasting** – cooking starch based foods with dry heat from a grill or flame



Radiation

Bread, buns, crumpets and other starch-based products, nuts, seeds

**Dry frying** – cooking food that naturally contains oil or fat in a frying pan without adding oil

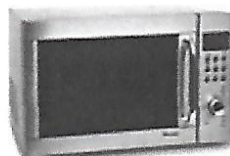


Conduction

Minced meat (e.g. beef, lamb, pork), nuts, seeds, tacos, flat breads (e.g. naan breads)

**Other methods of transferring heat energy**

**Microwaving** – cooking food by electromagnetic waves called microwaves in a microwave oven



Radiation

Sauces, cake and sponge pudding mixtures, scrambled eggs, vegetables, fruits, fish, soups, melting chocolate and butter



## Method of cooking

## Method of heat transfer

## Examples of suitable foods

### Methods using oil to transfer heat

**Sautéing** – frying food gently in a little oil in order to soften the food and develop the flavour



Conduction

Onions, leeks, peppers, meat/poultry and vegetables used as a base for soups and stews, celery, carrot, butternut squash, sweet potato, courgette

**Shallow frying (pan frying)** – frying food in a shallow frying pan in a little oil



Conduction

Eggs, fish (white or oily), bacon, burgers, sausages, meat cuts (e.g. chops, cutlets and steaks), pancakes, some flat breads, onions, potato slices, fishcakes, potato cakes, rissoles, bananas

**Stir frying** – frying food for a short time in a wok, using very little oil



Conduction

Finely cut vegetables and other foods (e.g. peppers, onion, mushrooms, courgettes, pak choi, spring onions, bean sprouts, mangetout, peas, bamboo shoots, root ginger, seafood, meat, poultry, nuts, tofu)

**Roasting** – cooking food in some oil or fat in a hot oven



Convection → Conduction

Meat and poultry joints, root vegetables (e.g. parsnips and potatoes), some fruits (e.g. plums), nuts

**Deep fat frying** – frying food in a deep pan of very hot oil, so that the food is fully immersed in the oil



Conduction → Convection

Fish, scotch eggs, chicken joints and pieces, battered vegetables (tempura), spring rolls, doughnuts, churros, seafood, fritters (e.g. apple, pineapple, corn), poppadums, onion bhajis, falafel, potato croquettes

Heating methods	What foods ingredients can you cook with this method	What does this mean?	What are the effects on the texture, smell and flavour of the food	What are the effects on the appearance of the food
Boiling				
Braising				
Poaching				
Simmering				
Steaming				
Stewing				
Sautéing				
BBQ				
Roasting				
Frying				
Baking				

## Selecting Appropriate Cooking Methods

Below are ingredients from 2 recipes. Next to each ingredient I would like you to write the most suitable cooking method that you think should be used (**NOTE: There may be more than one appropriate method of cooking**). You will also need to identify the method of heat transfer. I have done the first one for you...

### SPAGHETTI BOLOGNESE

<u>Ingredient</u>	<u>Method of Cooking</u>	<u>Method of Heat Transfer</u>
Streaky Bacon	Oil - Shallow Frying	Conduction
Onions		
Carrots		
Celery		
Garlic		
Beef Mince		
Plum Tomatoes		
Spaghetti		

### SAUSAGE, GRAVY, MASH AND PEAS

<u>Ingredient</u>	<u>Method of Cooking</u>	<u>Method of Heat Transfer</u>
Sausages	Dry - .....	
Onions		
Beef Stock		
Potatoes		
Frozen Peas		

# Protein

**Garnish:**

**Thickening:**

**Coagulation:**

**Emulsification:**

functions  
of eggs

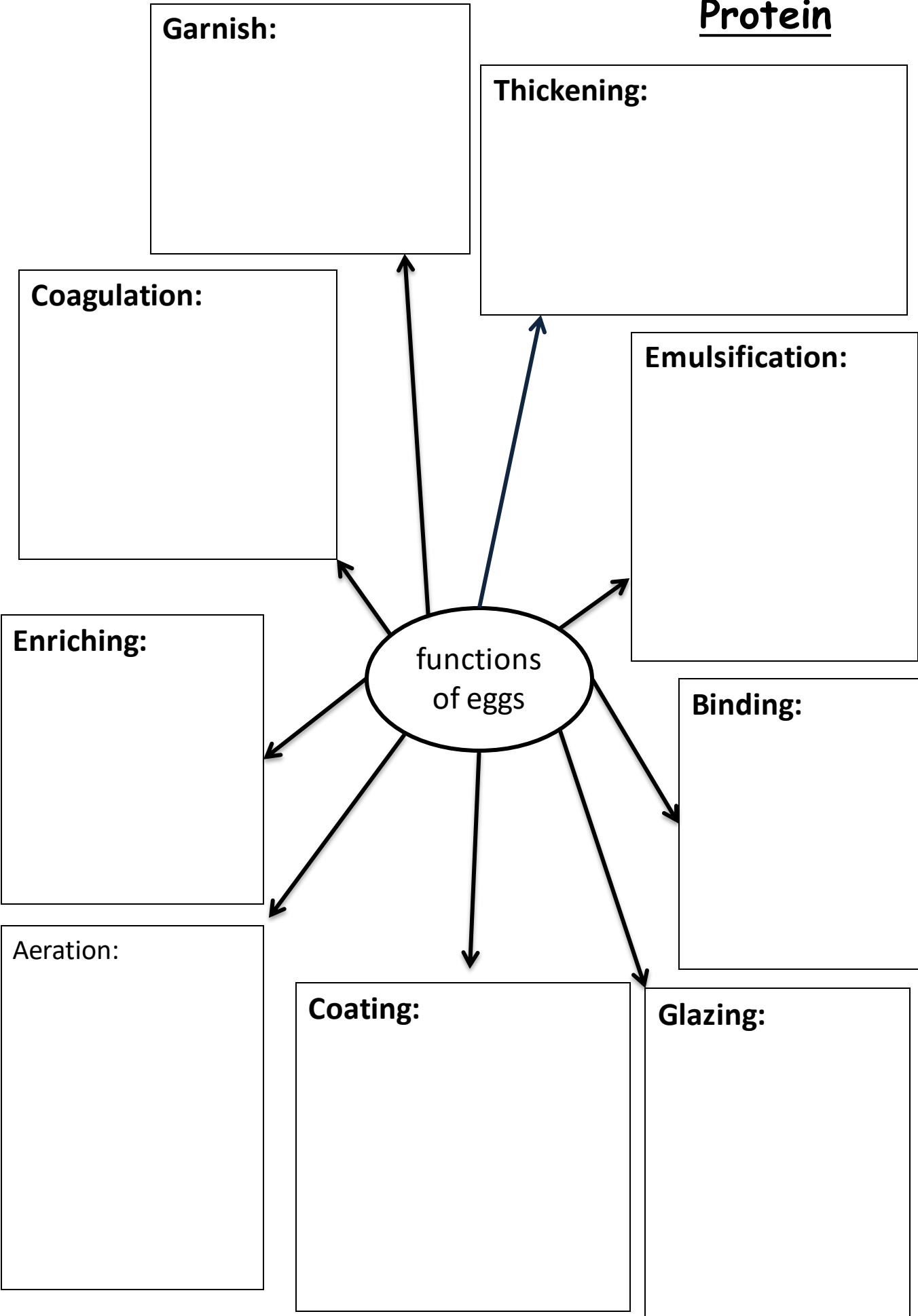
**Enriching:**

**Binding:**

**Aeration:**

**Coating:**

**Glazing:**



## The Functions of Protein

You need to understand the scientific principles underlying these processes when preparing and cooking food

You also need to be able to explain the working characteristics, functional and chemical properties of proteins.

Use images if appropriate

<b>Function</b>	<b>Description</b>
protein denaturation	
protein coagulation	
gluten formation	
foam formation	

## The Functions of Fat

Function	Description
	Fat coats the flour particles, preventing the flour absorbing the water. Preventing the water absorption stops the gluten developing. If the gluten cannot develop the mixture is shortened giving a crumbly, melt in the mouth texture.
	Required to add air into food. Eg. When fat is creamed with sugar to helps traps air
Plasticity	
Emulsification	

## The Functions of Carbohydrate

Function	Description
Gelatinisation	
Dextrinisation	
caramelisation	

# Raising Agents

How are raising agents added into food products?

Mechanical:

Chemical:

Biological:

Steam

In the table give examples how air, steam and carbon dioxide act as raising agents:

<b>Chemical</b>	<b>Mechanical</b>	<b>Biological</b>	<b>Steam</b>

## Key words—find the meanings of these words

### Raising Agents

.....  
.....  
.....  
.....

### Carbon Dioxide

.....  
.....  
.....  
.....

### Biological

.....  
.....  
.....  
.....

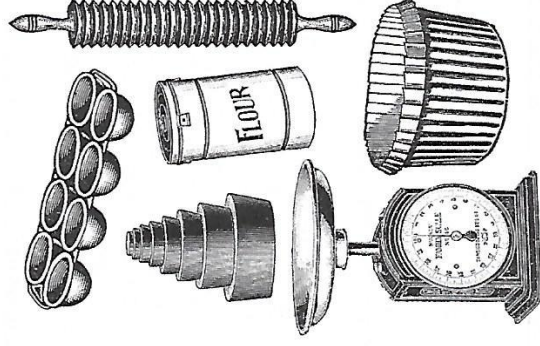
### Chemical

.....  
.....  
.....  
.....

1. How do raising agents work?
2. How do you get a light open texture when using a raising agent?
3. Give 2 examples of adding raising agents mechanically
4. What are the 3 gases that make products light?
5. Explain steam as a raising agent and give examples of products where steam has been used as a raising agent
6. How is carbon dioxide introduced into food?
7. What is yeast?
8. What conditions are needed for yeast reproduction?
9. Chemical raising agents produce what?
10. What is baking powder?

## THE FUNCTIONAL PROPERTIES OF FOOD

# Raising Agents





## Raising Agents

Raising agents work by incorporating a gas into a mixture. When the gases are heated they expand, rise and escape from the mixture. This gives a light, open texture.

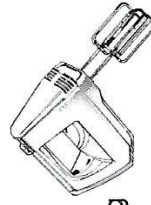
Raising agents may be added mechanically—such as sieving and beating. They can also be included in the ingredients e.g. yeast, bicarbonate of soda.

Raising agents are natural e.g. air, steam and yeast or chemical e.g. bicarbonate of soda, baking powder.

### Natural Raising agents

The 3 gases which make products light are air, steam and carbon dioxide. In most mixtures you use more than one raising agent. In a creamed cake mixture, the main raising agent is self raising flour, which produces carbon dioxide, but air is incorporated when creaming the butter and sugar.

You add air mechanically to food when you're whisking, sieving, creaming fat and sugar, beating, rubbing in fat to flour, rolling and folding



Steam is a raising agent in mixtures with a high proportion of liquid, which are cooked at high temperatures. The water in the mixture turns to steam.

## Chemical Raising Agents

Chemical raising agents produce carbon dioxide when they're heated with a liquid.

Self raising flour is convenient to use as it already has the raising agents added.

**Bicarbonate of soda** (Alkali) produces carbon dioxide and washing soda when its heated. The washing soda is dark yellow with a 'soapy' taste. Bicarbonate of soda is used in cakes with a strong flavor, like gingerbread or parkin (*Parkin or Perkin is a gingerbread cake traditionally made with oatmeal and black treacle, which originated in northern England*) to disguise the soapy taste.

**Bicarbonate of soda plus an acid**, e.g. sour milk, vinegar, lemon juice or cream of tartar, in other cakes an scones, to prevent the soapy taste.

**Baking Powder** is a mixture of bicarbonate of soda and acid, with a starchy filler to keep it fresh.



Examples of this are Yorkshire pudding, choux pastry, flaky and rough puff pastry.

It is common to see an open uneven texture when steam has been a raising agent.

Carbon dioxide is introduced into food using:

- Biological raising agents e.g. yeast
- Chemical raising agents e.g. bicarbonate of soda

### Biological Raising Agents

Yeast is a micro-organism. When it reproduces it gives off carbon dioxide.

The following conditions are needed for reproduction:

**Warmth:** Most active between 25°C—28°C. At lower temperatures it reproduces slowly, at high temperatures it is killed

### Liquid

**Food:** Sugar added to the mixture or obtained from flour

**Time:** the mixture must be covered and left to rise in a warm place

# Food Spoilage

What 4 conditions do Bacteria like to grow in? (Give examples and explanations)

T _ _ _ _ _ _ _ _ _ _	
F _ _ _ _	
T _ _ _ _	
M _ _ _ _ _ _ _ _	

How do we stop bacteria growing in food?

T

F

T

M

The signs of food spoilage - give examples of foods for each of the below

- enzymic action
- mould growth
- yeast action

# contamination

<b>Name of food poisoning-sources</b>	<b>Symptoms</b>	<b>Onset Time</b>
<b>Clostridium botulinum</b> Source:		
<b>Campylobacter</b> Source:		
<b>Clostridium perfringens</b> Source:		
<b>E Coli 0157</b> Source:		
<b>Salmonella</b> Source:		
<b>Staphylococcus aureus</b> Source:		
<b>Listeria Monocytogenes</b> Source:		

# Food Safety theory

## Do now Activity

What is bacteria? \_\_\_\_\_  
\_\_\_\_\_

What is food safety? \_\_\_\_\_  
\_\_\_\_\_

These four rules of food safety

- ◆ \_\_\_\_\_
- ◆ \_\_\_\_\_
- ◆ \_\_\_\_\_
- ◆ \_\_\_\_\_

Personal Hygiene—Identify what the chef has done to model safe personal hygiene.



High risk foods are \_\_\_\_\_

Examples include \_\_\_\_\_

Low risk foods are \_\_\_\_\_

Examples include \_\_\_\_\_

A used by date is \_\_\_\_\_

A best by date is \_\_\_\_\_

What would you look for when buying products to determine if the food is safe to eat and fresh.

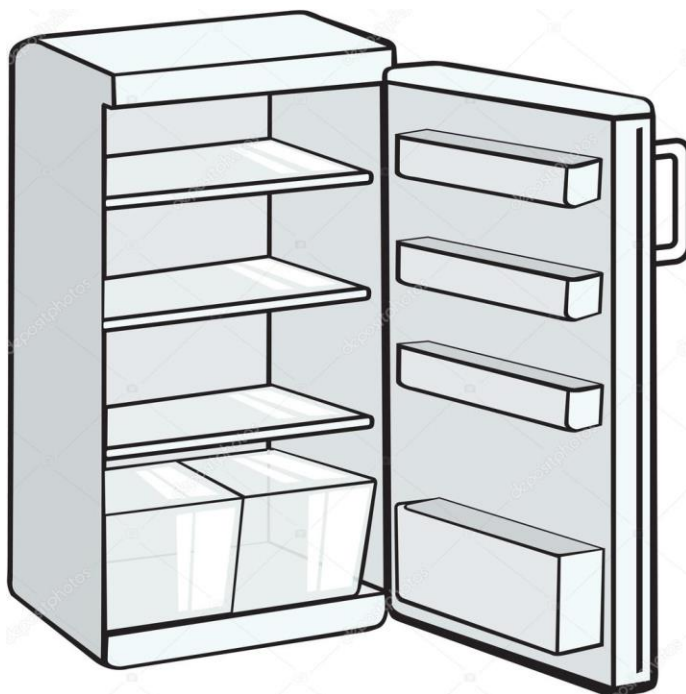
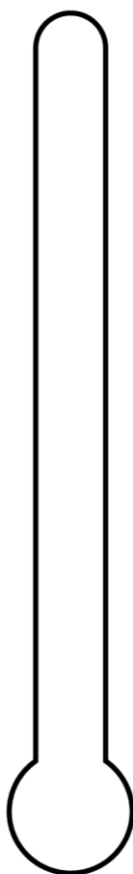
Fresh fish \_\_\_\_\_

Fresh meat \_\_\_\_\_

Fresh vegetables \_\_\_\_\_

Fresh fruit \_\_\_\_\_

Packaged food \_\_\_\_\_



# Food Hygiene

How does food poisoning happen?

Define what Pathogenic bacteria is.

What are the 4 most common types of food poisoning and which foods carry them?

1. S

2.St

3. C

4.E.C

5. L

What is a high risk food?

Temperature	What is happening to bacteria?
-18C	
0-5C	
5-63C	
37C	
72C	

# Food Storage

## Temperature of Freezer :

When food is frozen bacteria.....

## Temperature of Fridge:

When food is chilled bacteria....

What 4 essential rules need to be followed when reheating food?

- 1.....
- 2.....
- 3.....
- 4.....

How do you use a temperature food probe?

<u>Step 1:</u>	<u>Step 2:</u>
<u>Step 3:</u>	<u>Step 4:</u>

What is meant by the term Ambient?

## Food handling & Personal Hygiene

List 7 things food handlers have to do to make sure their hygienic and safe in the kitchen.

1	
2	
3	
4	
5	
6	
7	

Explain what **cross-contamination** is and when it could occur....

Red chopping board is for.....

Green chopping board is for.....

Yellow chopping board is for.....

Blue chopping board is for.....

White chopping board is for.....



## Food Choice

### Factors affecting food choice

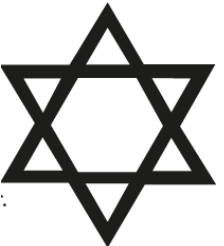


Give detailed reasons what families need to consider when meal planning. (10 marks)

## Food Choice

# Factors affecting food choice

Food choice linked to the following religions and cultures: Buddhism, Christianity, Hinduism, Islam, Judaism, Rastafarianism and Sikhism



# Packaging & Labelling

Why do we package & label food?	Reason	Explanation
	P	
	P	
	P	
	P	

List 10 Things that must be displayed on a food product label (according to EU Law):

1

---

2

---

3

---

4

---

5

---

6

---

7

---

8

---

9

---

10

---

# Nutritional Labelling and Marketing

Dietary Reference Values (DRVs)	
Traffic light labelling.	
Nutritional Panel	
Guideline Daily amount (GDAs)	

Discuss how food marketing can influence food choice eg buy one get one free, special offers, meal deals, media influences, advertising, point of sales marketing.

# Food products from British tradition and two different cuisines.

Country	distinctive features and characteristics of cooking	equipment and cooking methods used	eating patterns	presentation styles	Examples of recipes.
Britain					

# Sensory evaluation

## The importance of sensory testing

The sensory analysis of food plays an important role in the food industry. Food product-development specialists carry out a range of sensory analysis tests to produce the variety of foods that are available in the shops. Food manufacturers wish to ensure consumers continue to buy existing products because they like their taste and new products because they are innovative and existing.

## Sensory analysis tests are carried out to:

- Evaluate new and established products
- Analyse food products for improvements
- Establish consumer response to a product
- Ensure that a product meets its original specification
- Conduct a product review, assess quality control and make improvements to the product
- Maintain product quality
- Assess shelf life

## How to set up a sensory analysis test:

---

---

---

---

---

---

---

---

---

---

# Name the 5 senses



## Sensory analysis tests

Sensory analysis tests can be used on food products to establish their most important characteristics. There are several types of sensory analysis tests, which can be used by the industry. These are laid down by British Standard (BS5929)

They include:

Preference or acceptance tests

These tests are used to establish the acceptability of a product by finding out the opinions likes and dislikes of the consumer. They are not intended to evaluate specific characteristics, such as crunchiness or smoothness. The information gathered is subjective and large numbers of consumers are required to complete the testing. There are a number of different types of Preference tests

Paired preference test

Hedonic ranking or descriptors

Discrimination or Difference tests

These tests would be used to find out if there is a perceptible difference between two or more products. They are objective tests. They use comparative judgements to determine differences in particular sensory characteristics or small differences between products. Food manufacturers would use these tests in product development eg: reducing the fat content of a 'healthy option' product range.

triangle test

Grading Tests

These tests are used to produce a ranking, rating and profiling of a product. Trained testers can also assess the flavour or texture of a product to provide a sensory profile. These tests assess the intensity of specific sensory qualities. There are a number of different grading tests

Ranking test

Rating test

Star profile

# Food Provenance

## Environmental Considerations

How can manufacturers be more environmentally friendly with their packaging?

1.....

2.....

3.....

4.....

5.....

**Define the following key terms:**

Genetically Modified

Intensive farming

Free range foods

Organic Farming/Food

Sustainable fishing

Fairtrade

Carbon footprint

Food miles



1 Why is traceability important?

---

---

---

---

---

---

[4]

2 Explain the differences between the hens that lay battery, free range, barn and organic eggs.

Battery \_\_\_\_\_

[2]

Free-range \_\_\_\_\_

[2]

Barn \_\_\_\_\_

[2]

Organic \_\_\_\_\_

[2]

3 What concerns are there about GM (Genetically Modified) food production? Tick (✓) the correct answers.

- a) It is more expensive.
- b) There is a possibility of new strains of microorganisms developing.
- c) It is altering and playing with nature.
- d) It is less resistant to plant disease.
- e) It is not monitored.

[2]

## Waste food and packaging

### Food Waste

Your food does its job best when it's on a plate ready to be enjoyed. Saving food saves money and helps to slow down global warming and deforestation. Reducing the amount of food that ends up in the bin also means you can say goodbye to unnecessary packaging waste. If we all make a few small changes and start using up the food we buy, together we can make a big difference.

**We throw away lots of food at home.**

**List 4 reasons why...**

---

---

---

---

**Why do you think producers and retailers waste food too?**

---

---

---

---

**Food waste**

**How can we reduce our food waste?**



## Food Provenance

# Primary and secondary processing

Milk and Milk products

Wheat

# Additives

What is a food **additive**

What are the 4 main roles of additives?

1	
2	
3	
4	

Complete the table of additives, functions & food examples:

<b>Additive</b>	<b>Function</b>	<b>Food Example</b>
Preservatives		
Colourings		
Flavourings		
Emulsifiers		
Stabilisers		
Anti-oxidants		
Nutritional enhancers		
Thickeners & Gelling agents		

What are the issues in the media surrounding **E numbers**?

# Technological developments

Technological developments to support better health and food production including fortification and modified foods with health benefits and the efficacy of these.

Write some brief notes on the following:

- cholesterol lowering spreads
- health benefits of fortification
- fortified foods: thiamin, niacin, calcium and iron added to white flour
- folic acid and iron added to breakfast cereals
- vitamins A and D added to fats and low fat spreads

1 If large areas of rainforest are cut down, which gas will build up?

---

2 Write about **three** different things that can be done to tackle the sustainability of a food source.


---



---



---

3  a) What does this logo mean?




---



---

b) Give **two** examples of foods that could display this logo.

---

4 What are the advantages of buying a pack of chicken that displays the Red Tractor logo?

---



---



---



---



---



---

5 Beef burgers are a very popular takeaway food and use beef, which means that more cattle are reared to supply the fast food industry. Explain what effect this demand for beef supply is having on our climate.

---



---



---

Total Marks \_\_\_\_\_ / 17



## METHODS OF PROCESSING

Most of the foods we buy are processed in some way or another. These processes help to make products that are safe, of consistent quality and convenient for consumers.

Each process used in a manufacturing line is called a 'unit operation'. Unit operations can, for example, involve preparing ingredients, converting ingredients into finished products, packaging products, or testing them.

Hygiene in a manufacturing line is very important. Different types of hygiene-related unit operation have different purposes:

**1 CONTROLLING** the rate of growth of bacteria  
For example, by:

- Keeping a food cold
- Keeping a food hot
- Dehydration
- Pickling

**2 DESTROYING** bacteria  
For example, by:

- Sterilising
- Pasteurising
- Cooking

**3 PREVENTING** bacteria from contaminating a food after it has been processed  
For example, by:

- Sealing in a package

The lists below show simplified versions of the unit operations used to process different foods:

**SAUSAGES**

- 1) Meat is chopped or minced
- 2) Other ingredients are added
- 3) Ice is added to mixture
- 4) Mixture is put into skins and twisted
- 5) Packaged in sealed plastic
- 6) Cold stored and despatched

**BOTTLED WHOLE MILK**

- 1) Milk delivered to dairy from farm in cold tankers
- 2) Stored chilled
- 3) Pasteurised (heated to 72°C for 15 seconds)
- 4) Cooled to less than 5°C
- 5) Put into clean bottles
- 6) Tops fitted
- 7) Cold stored then despatched

**FROZEN PEAS**

- 1) Peas picked
- 2) Transported quickly to factory
- 3) De-podded, sorted and size graded
- 4) Blanched in hot water or steam to destroy enzymes
- 5) Cooled and dried
- 6) 'Fluidised bed' quick freezing
- 7) Packed in bags
- 8) Quality control check
- 9) Frozen to less than -18°C and despatched frozen

**READY-MADE MEAL OF PASTA IN TOMATO SAUCE**

- 1) Pasta cooked
- 2) Pasta cooled
- 3) Weighed into plastic package
- 4) Tomato sauce cooked
- 5) Sauce put onto pasta in package
- 6) Sealed with film lid
- 7) Packaged into cardboard outer sleeve
- 8) Chilled to less than 5°C and despatched

For each of the products described, decide which unit operations are key to hygiene control and match the purposes listed in the table below.  
Clue: not every box will be filled and you can enter more than one unit operation in a box.

Purpose	Sausages	Bottled Milk	Frozen Peas	Ready Meal
<b>CONTROLLING</b> the rate of growth of bacteria				
<b>DESTROYING</b> bacteria				
<b>PREVENTING</b> bacteria from contaminating a food after processing				

1 What is homogenised milk?

\_\_\_\_\_

\_\_\_\_\_ [2]

2 What can happen if cream is heated?

\_\_\_\_\_ [1]

3 a) Name **three** regional varieties of cheese from the UK.

\_\_\_\_\_ [3]

b) Name **three** French cheeses.

\_\_\_\_\_ [3]

Name **six** different types of flour made from wheat.

\_\_\_\_\_

\_\_\_\_\_ [6]

Choose the correct words from the boxes to complete the following sentences.

- gluten    sugar    yeast    proving    kneading    glaze    dough    liquid

Bread is made by mixing strong flour (which is high in \_\_\_\_\_) with \_\_\_\_\_ and a raising agent such as \_\_\_\_\_. The yeast ferments with \_\_\_\_\_ and warm water, and then when added to the flour and salt it makes a \_\_\_\_\_. The dough is then worked by a process called \_\_\_\_\_. The dough is then allowed to rise further by standing covered in a warm environment. This is known as \_\_\_\_\_. The bread dough is then shaped and finished with a \_\_\_\_\_ before baking. [8]

What type of flour is used to make pasta? What is it made from?

\_\_\_\_\_ [2]



## Key words/Terms

**Additives** - Substances added to food in small amounts to perform a function such as to preserve, colour or flavour a product.

**Aesthetics** - The appreciation of good taste or good design. The product appeals to your senses. "It looks appealing, I want to eat it!"

**Ambient temperature** - Normal room temperature. 20 - 25°C

**Antibacterial** - Working against or prohibiting the growth of bacteria.

**Bacteria** - Small microscopic organisms found all about us. They multiply by splitting in two every 20 mins. (Binary fission)

**Batch production** - Producing a small quantity of identical products. For GCSE assume 50.

**Blast chill** - To cool food quickly by blasting it with cold air.

**Blast freezing** - Quickly freezing that makes small ice crystals which do less damage to the food than slow freezing.

**Brand** - A particular make of product usually with a well known name e.g. Heinz baked beans.

**Consumer** - A person who buys or uses products and services.

**Cook-chill** - Food that has been cooked, fast chilled and then stored at low temperatures.

**Cook-freeze** - Food that has been cooked, fast frozen and then stored below freezing point.

**Cross contamination** - The transfer of harmful bacteria from one area to another.

**Danger zone** - The temperature range in which bacteria thrive (5 - 63°C).

**Diet** - The food and drink that we eat.

**Dietary Reference Values DRV's** - DRV's show the amount of food energy or other nutrients needed by people of different ages.

**Due diligence** - In food preparation this means that the company has set up systems to help avoid contamination of food products.

**E numbers** - The number given to an additive to show that it has been approved by the EU.

**Environmental Health Officer EHO** - The enforcement officer at local government level who covers public health such as the hygiene of food premises and food safety.

**Hazard** - Anything that can cause harm to the consumer.

**High risk area** - The section in the food preparation area where food is most likely to be contaminated by bacteria.

**High risk foods** - Those most likely to encourage bacterial growth. e.g. cooked meat, cooked poultry, fish, dairy foods.

**Logo** - The symbol of a company used on products.

**Low risk area** - Section in the food preparation area where food is less likely to be contaminated by bacteria.

**M.A.P.** - Modified atmosphere packaging. Removing the air and flushing the packet with a gas.

**Marketable product** - One that appeals to people and will sell when it reaches the shops; to succeed, all products must be marketable

**Organoleptic Testing** - A posh term for sensory analysis. Using your sensory organs to test a product. In simple language, taste testing!

**Portion** - A portion for one is the amount of food that satisfies the need for one person.

**Preservative** - Something added to food to slow down the growth of bacteria so that food lasts longer.

**Quality assurance** - A system that is set up before a product is made and which lays down procedures for making a safe, quality product.

**Quality control** - The steps in the process of making a product to make sure that it meets the standards; faulty products are removed.

**Sensory descriptors** - Words that describe taste, smell, texture and flavour.

**Shelf life** - How long a food product can be kept, making sure it is safe to eat and good quality.

**Target Market / group** - The person or group of people that the product is aimed at. e.g. teenagers, families.

**Tolerance level** - The amount and flexibility allowed when making a product - in terms of weight, colour, size - so that it meets quality standards.

**Traceability** - Tracing a fault back to the point at which it occurred in order to remedy the fault and avoid it happening again.