

Food Preparation and Nutrition GCSE Revision 2024



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

3.2 Food, nutrition and health

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

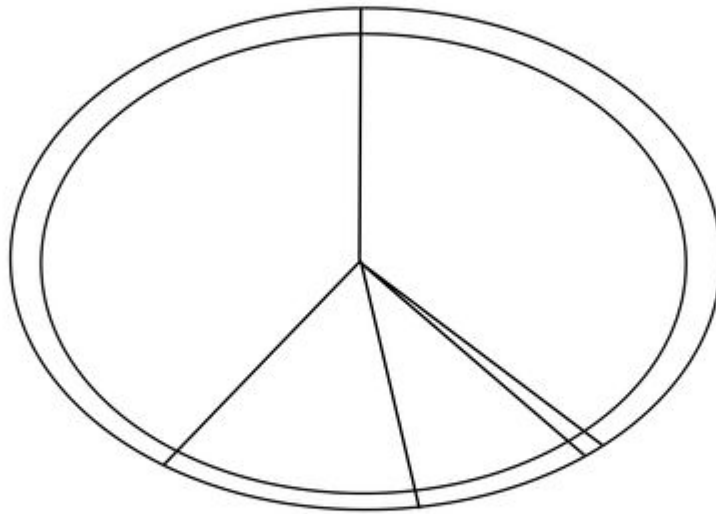
3.2 Food, nutrition and health

Nutrient	Function in the body	Deficiency	Food source
Minerals			
Calcium			
Iron			
Sodium (salt)			
Flouride			
Iodine			
Phosophorus			
Important Non-nutrients			
Water			

The Eatwell Guide and 8 tips to healthy eating

Explain what the Eatwell 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.

Life stages – meal planning

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	

Different / 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	

Diet, nutrition and 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	

Energy needs



The amount of energy we need varies with:

- Age
- Gender
- Activities we do.

70% of the energy we need is used for body functions such as breathing, nerves, etc. This is called BMR (basal metabolic rate).

The energy people use for all other types of movement is called our physical activity level (PAL).

If we eat more energy than we use, the rest is stored as fat.

What is meant by the energy balance?

3.3 Food science

Cooking of food and heat transfer

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:

Protein

Garnish:

Thickening:

Coagulation:

Emulsification:

Enriching:

Binding:

Aeration:

Coating:

Glazing:

functions
of eggs

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graph TD; A((functions of eggs)) --> B[Garnish]; A --> C[Thickening]; A --> D[Emulsification]; A --> E[Binding]; A --> F[Glazing]; A --> G[Coating]; A --> H[Aeration]; A --> I[Enriching]; A --> J[Coagulation]; A --> K[Protein];
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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

Function	Description
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:

Chemical	Mechanical	Biological	Steam

3.4 Food Safety

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

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

Red chopping board is for.....

Green chopping board is for.....

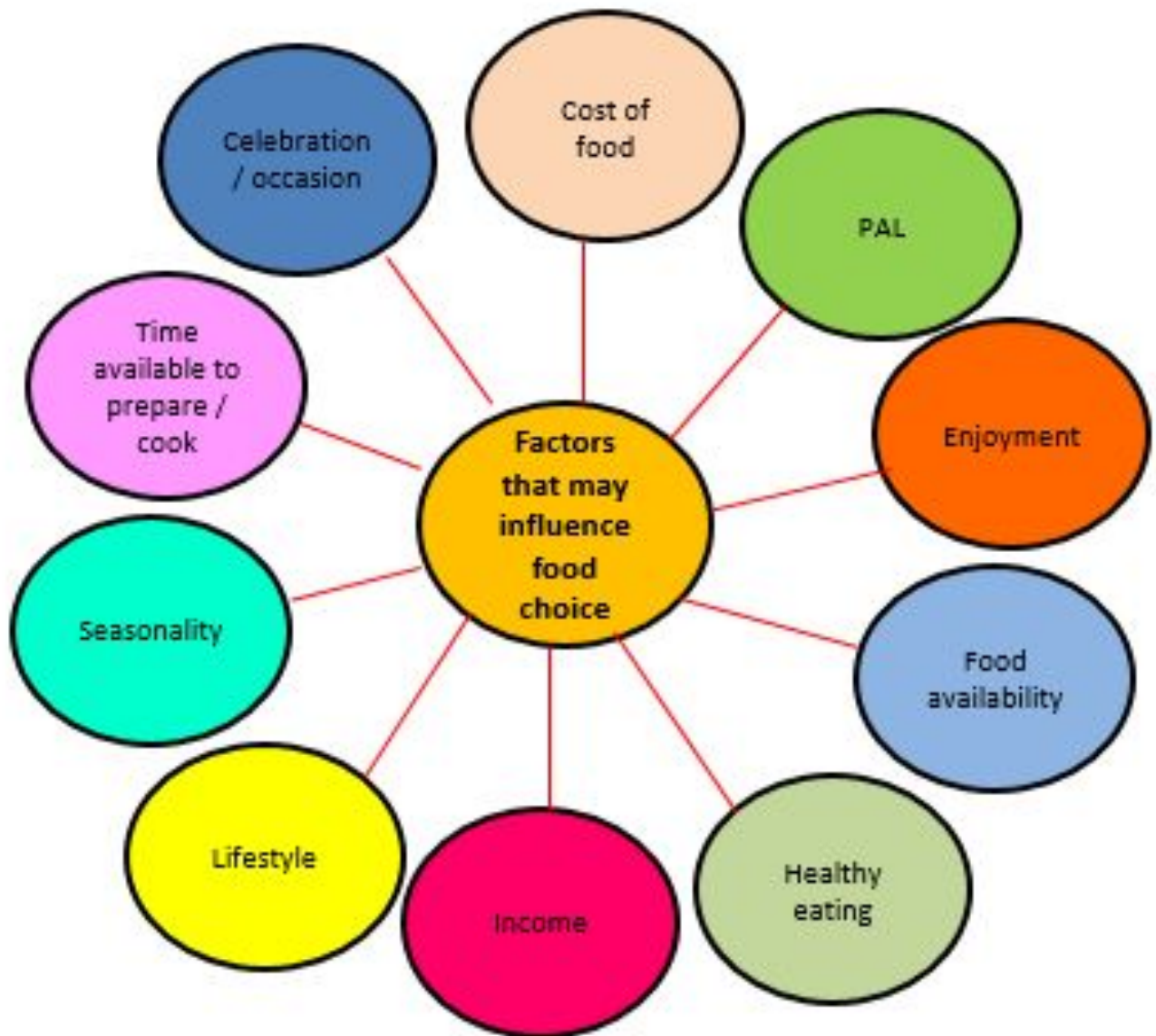
Yellow chopping board is for.....

Blue chopping board is for.....

White chopping board is for.....

3.5 Food Choice

Factors affecting food choice

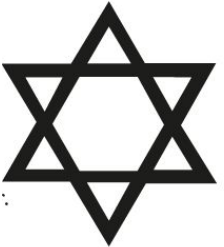
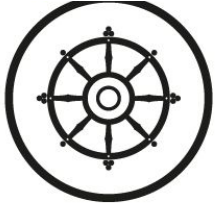


Give detailed reasons that families need to consider when meal planning. (10 marks)

3.5 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.

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

3.6 Food Provenance

Environmental Considerations

How can manufacturers be more environmentally friendly with their packaging?

- 1
- 2
- 3
- 4
- 5

Define the following key terms:

<u>Genetically Modified</u>
<u>Intensive farming</u>
<u>Free range foods</u>
<u>Organic Farming/Food</u>
<u>Sustainable fishing</u>
<u>Fairtrade</u>
<u>Carbon footprint</u>
<u>Food miles</u>

3.6 Food Provenance

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?



3.6 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:

Additive	Function	Food Example
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

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.