

GCSE Food Preparation & Nutrition

Knowledge & Understanding - OCR J309 Specification Review

This document explains everything that you should have a knowledge and understanding of having completed the course. Each of the four sections from the Specification have been colour coded as follows:

Section A: Nutrition

Section B: Food (food provenance and food choice)

Section C: Cooking and food preparation

Section D: Skill requirements (preparation and cooking techniques)

You can use this at various points throughout the course to assess how confident you are with each topic.

			
<p>The major commodity groups</p> <p>Bread, rice, potatoes, pasta and other starchy foods</p> <ul style="list-style-type: none"> ✓ Bread, rice, potatoes, pasta, flour and cereals (including wheat, oats, maize, barley, rye) <p>Fruit and vegetables</p> <ul style="list-style-type: none"> ✓ Fresh, frozen, dried, canned and juiced fruit and vegetables <p>Milk and dairy foods</p> <ul style="list-style-type: none"> ✓ Milk, cream, cheese and yoghurt <p>Meat, fish, eggs, beans and other non-dairy sources of protein</p> <ul style="list-style-type: none"> ✓ Meat, fish, eggs, beans, nuts, seeds and alternative protein foods (Quorn®, soya: textured vegetable protein TVP®, tofu) <p>Foods and drinks high in fat and/or sugar.</p> <ul style="list-style-type: none"> ✓ Butter, margarine, spreads, plant oils, sugar and syrup. 			
<p>The relationship between diet and health</p> <p>A balanced diet to provide the correct combination of food and nutrients for good health</p> <ul style="list-style-type: none"> ✓ The importance of a healthy diet ✓ How to use the major commodity groups to make a balanced food choice <p>The government's guidelines for a healthy diet and the inclusion of new regulations as they are issued</p> <p>The application of the eight tips for healthy eating</p> <p>Major diet-related health issues</p> <ul style="list-style-type: none"> ✓ Diet-related diseases and conditions: obesity (weight loss and gain), cardiovascular, coronary heart disease (CHD), diabetes, diverticulitis, bone health (osteoporosis), dental health, anaemia and high blood pressure ✓ 			

<p>Nutritional and dietary needs of different groups of people</p> <p>Dietary needs for different stages of life</p> <ul style="list-style-type: none"> ✓ Balanced combinations of food, nutrients and correct portion sizes for babies, toddlers, pre-school children, school-aged children, adolescents, adults, older people, pregnant and lactating women 			
<p>Food allergies and intolerances</p> <ul style="list-style-type: none"> ✓ Foods that may cause an allergic reaction ✓ Food intolerance: lactose and gluten (coeliacs) <p>The dietary reference values (DRVs) Macronutrients and micronutrients</p> <p>Calculation of nutritional values</p> <ul style="list-style-type: none"> ✓ Recommended daily amounts of macro and micro nutrients and energy ✓ Plan recipes, meals and diets based on nutritional analysis 			
<p>Nutritional needs when selecting recipes for different groups of people</p> <p>Modifying recipes and meals to follow current dietary guidelines</p> <ul style="list-style-type: none"> ✓ Altering or substituting ingredients, changing the method of cooking or process and changing the portion size 			
<p>Energy balance</p> <p>The relationship between food intake and physical activity and how to maintain a healthy body weight throughout life</p> <ul style="list-style-type: none"> ✓ Basal metabolic rate (BMR) and physical activity level (PAL) and their importance in determining energy requirements <p>How to calculate energy values and the main sources of energy in the diet</p> <ul style="list-style-type: none"> ✓ Recommended percentage of daily energy intake ✓ Sources of energy: protein, fat, carbohydrate and alcohol ✓ Units (kcal and kJ) for measuring energy <p>The main factors that influence an individual's energy requirements</p> <ul style="list-style-type: none"> ✓ Gender, life stage, pregnancy/lactation, size/body weight, genetics, occupation and lifestyle ✓ Deficiency and excess 			
<p>Protein (Macronutrient)</p> <p>Types, functions and sources</p> <ul style="list-style-type: none"> ✓ Types and structure: High biological value (HBV) and low biological value (LBV) ✓ Functions and deficiency ✓ Animal and vegetable 			
<p>Fat (Macronutrient)</p> <p>Types, functions and sources</p> <ul style="list-style-type: none"> ✓ Types and structure: fats and oils (saturated, unsaturated and polyunsaturated) ✓ Functions and deficiency ✓ Animal and vegetable: visible and invisible 			

<p>Carbohydrate (Macronutrient)</p> <p>Types, functions and sources</p> <ul style="list-style-type: none"> ✓ Sugar: monosaccharides, disaccharides, starch: complex carbohydrates and fibre ✓ Functions and deficiency ✓ Sugar, starch and fibre 			
<p>Vitamins (Micronutrients)</p> <p>Types, functions and sources</p> <ul style="list-style-type: none"> ✓ Fat soluble vitamins: A (retinol and carotene), D, E, K ✓ Water soluble vitamins: B1 (thiamine), B2 (riboflavin), B3 (niacin), B9 (Folate/Folic acid), B12 (cobalamin), C (ascorbic acid) ✓ Functions and deficiency ✓ Food sources of vitamins 			
<p>Minerals (Micronutrients)</p> <p>Types, functions and sources</p> <ul style="list-style-type: none"> ✓ Calcium, iron, sodium, fluoride, iodine, phosphorus ✓ Functions and deficiency ✓ Foods that supply minerals 			
<p>Water</p> <p>Importance of water and sources</p> <ul style="list-style-type: none"> ✓ Functions and deficiency ✓ Recommended guidelines for daily intake of water ✓ Sources and foods that give us water 			
<p>Nutritional content of the main commodity groups</p> <p>Bread, rice, potatoes, pasta and other starchy foods</p> <p>Fruit and vegetables</p> <p>Milk and dairy foods</p> <p>Meat, fish, eggs, beans and other non-dairy sources of protein</p> <p>Foods and drinks high in fat and/or sugar</p> <ul style="list-style-type: none"> ✓ Nutritional content of each commodity group 			
<p>FOOD PROVENANCE: Food source and supply</p> <p>Food sources and how they are:</p> <p>a) grown: cereals, sugars, fruits and vegetables</p> <ul style="list-style-type: none"> ✓ Advantages and disadvantages of locally produced and seasonal foods ✓ Where and how they are grown: organic and non-organic farming ✓ Classification of fruits and vegetables <p>b) reared: meat and poultry</p> <ul style="list-style-type: none"> ✓ Where and how they are reared: intensive farming methods, free-range products, rearing of the animals ✓ Classification of meat, poultry and game <p>c) caught: fish</p> <ul style="list-style-type: none"> ✓ Where and how they are caught: sustainable fish supply ✓ Classification of fish 			

<p>Food processing and production</p> <p>Primary stages of food processing</p> <ul style="list-style-type: none"> ✓ How wheat is milled and processed to produce flour ✓ Heat treatment of milk <p>Secondary stages of food processing and production</p> <ul style="list-style-type: none"> ✓ The processes that raw food undergoes to transform it into a food product ✓ How milk is processed to produce butter, cream, yoghurt and cheese ✓ How flour is used to produce bread and pasta 			
<p>Food processing and preserving methods: industrial and domestic</p> <ul style="list-style-type: none"> ✓ High temperatures: pasteurisation, sterilisation (ultra heat treated (UHT) and canning) ✓ Cold temperatures: chilling, freezing, cook-freeze/blast chilling and accelerated freeze-drying (AFD) ✓ Drying and smoking ✓ Using acids, salt and sugar ✓ Controlled atmosphere packaging (CAP)/modified atmosphere packaging (MAP) and vacuum packing 			
<p>Food security</p> <p>The impact of food and food security on society, local and global markets and the environment</p> <p>Moral/ethical and environmental issues involved in food production</p> <ul style="list-style-type: none"> ✓ The availability of food, the access to food, the individual's ability to utilise food ✓ Moral issues: how Fairtrade affects food producers and workers ✓ Ethical issues: relating to the development of genetically modified (GM) food ✓ Environmental issues: food waste ✓ Carbon footprint and the transportation of materials and goods ✓ Sustainability of resources 			
<p>Technological developments to support better health and food production</p> <p>Fortification</p> <ul style="list-style-type: none"> ✓ The advantages and disadvantages of fortification <p>Use of additives</p> <ul style="list-style-type: none"> ✓ Preservatives, colourings, flavourings and sweeteners, emulsifiers and stabilisers and thickeners, antioxidants <p>New and emerging foods</p> <ul style="list-style-type: none"> ✓ Probiotics and prebiotics 			

<p>Development of culinary traditions (learners must study British cuisine and a minimum of TWO international cuisines)</p> <p>Features and characteristics of individual cuisines</p> <ul style="list-style-type: none"> ✓ Recognise traditional ingredients ✓ Understand religious or cultural factors affecting the cuisine ✓ Understand traditional cooking methods, presentation and eating patterns ✓ Recognise how the traditional recipes have been adapted to suit today's society 			
<p>Factors influencing food choice</p> <p>Personal, social and economic factors, medical reasons</p> <ul style="list-style-type: none"> ✓ Food choice can be affected by cost, enjoyment, preference, seasonality, availability, time of day, activity, celebration or occasion ✓ Consumer information, food labelling, marketing 			
<p>Religious and cultural beliefs</p> <ul style="list-style-type: none"> ✓ Food choice can be affected by related beliefs of major religions: Buddhism, Hinduism, Islam, Judaism, Rastafarianism and Sikhism <p>Ethical and moral beliefs</p> <ul style="list-style-type: none"> ✓ Vegetarians (lacto-ovo, lacto, ovo and vegans), animal welfare, local produce, organic food 			
<p>Food Science</p> <p>The reasons why food is cooked</p> <ul style="list-style-type: none"> ✓ Making food safe to eat ✓ Making food more digestible/palatable <p>Heat transfer through cooking methods</p> <ul style="list-style-type: none"> ✓ Conduction, convection and radiation <p>How preparation and cooking methods/processing</p> <ul style="list-style-type: none"> • affect the nutritional value • improve the sensory properties <ul style="list-style-type: none"> ✓ Enrichment/loss, increase/reduce calorific value, vitamin loss ✓ Texture, flavour, appearance, aroma <p>Working characteristics and the functional and chemical properties of ingredient groups</p> <ul style="list-style-type: none"> ✓ Carbohydrates: gelatinisation, dextrinisation, caramelisation ✓ Fats/oils: shortening, aeration, plasticity, emulsification ✓ Protein: coagulation, foam formation, gluten formation, acid denature ✓ Fruit and vegetables: enzymic browning/oxidisation ✓ Raising agents: yeast, chemical agents, air and steam 			

<p>Sensory properties</p> <p>The senses (organoleptic properties)</p> <ul style="list-style-type: none"> ✓ Changes that happen when food is cooked: texture, appearance, colour taste, sound and aroma <p>Sensory systems</p> <ul style="list-style-type: none"> ✓ The importance of the senses of sight, taste, touch, smell and hearing and how they work when making food choices ✓ The five basic tastes recognised by receptors (sweetness, sourness, bitterness, saltiness and umami) <p>Preferential and sensory testing panels</p> <ul style="list-style-type: none"> ✓ How to set up a testing panel ✓ Styles and forms of rating, ranking and profiling systems with the use of appropriate descriptive terminology 			
<p>Food safety</p> <p>Conditions and control for bacterial growth</p> <ul style="list-style-type: none"> ✓ The role of time, temperature, moisture and food availability <p>Growth conditions and control for mould growth and yeast production</p> <ul style="list-style-type: none"> ✓ The role of time, temperature, moisture and food availability <p>Signs of food spoilage</p> <ul style="list-style-type: none"> ✓ Natural decay, enzyme action and yeast production <p>Helpful properties of micro-organisms in food production</p> <ul style="list-style-type: none"> ✓ Types of micro-organisms and key points <p>Buying food</p> <ul style="list-style-type: none"> ✓ Labelling and date marks ✓ Visual checks ✓ Reputable supplier <p>Storing food</p> <ul style="list-style-type: none"> ✓ Types of storage and how to store foods correctly <p>Preparing food</p> <ul style="list-style-type: none"> ✓ Preventing cross contamination and food poisoning: direct and indirect methods ✓ Cooking and serving food High-risk foods, critical temperatures 			
<p>Knife skills</p> <ul style="list-style-type: none"> ✓ Meat, fish or alternatives: fillet a chicken breast, portion a chicken, remove fat and rinds, fillet fish, slice raw and cooked meat and fish or alternatives (such as tofu and halloumi) evenly and accurately ✓ Fruits and vegetables: bridge hold, claw grip, peel, slice, dice and cut into evenly sized pieces (i.e. batons, julienne) 			

<p>Preparation and techniques</p> <ul style="list-style-type: none"> ✓ Tenderise and marinate (when preparing vegetables, meat, fish, and alternatives): acids to denature protein, marinate to add flavour and moisture ✓ Meat, fish or alternatives: roll, wrap, skewer, mix, coat, layer meat, fish and alternatives and shape and bind wet mixtures (such as falafels, meat balls, fish cakes) while demonstrating the technical skill of preventing cross-contamination and handling high-risk foods correctly ✓ Fruits and vegetables: mash, shred, scissor-snip, scoop, crush, grate, peel, segment, de-skin, deseed, blanch, shape, pipe, blend, juice and prepare garnishes whilst demonstrating the technical skills of controlling enzymic browning and spoilage and preventing food poisoning (wash and dry, where appropriate) 			
<p>Cooking methods</p> <ul style="list-style-type: none"> ✓ Water-based methods using the hob: steaming, boiling and simmering, blanching and poaching ✓ Dry heat and fat based methods using the hob: dry-frying, pan (shallow frying), stir-frying ✓ Using the grill: char, grill or toast ✓ Using the oven: baking, roasting, casseroles and/or tagines, braising 			
<p>Sauces</p> <ul style="list-style-type: none"> ✓ Make a blended white sauce (starch gelatinisation), such as a roux, and an all-in-one blended sauce, infused sauce, velouté, béchamel, to demonstrate understanding of how liquid: starch ratios affect the viscosity and how conduction and convection work to cook the sauce and the need for agitation ✓ Make a reduction sauce such as pasta sauce, curry sauce, gravy, meat sauce (including meat alternatives such as micro-protein and textured vegetable protein) to demonstrate how evaporation concentrates flavour and changes the viscosity of the sauce ✓ Make an emulsion sauce such as a salad dressing, mayonnaise, hollandaise to demonstrate the technical skill of how to make a stabilised emulsion 			
<p>Set a mixture</p> <ul style="list-style-type: none"> ✓ Removal of heat (gelation): use starch to set a mixture on chilling for layered desserts such as custard or cheesecake ✓ Heating (coagulation): use protein to set a mixture on heating such as denatured protein in eggs for quiche, choux pastry 			
<p>Raising agents</p> <ul style="list-style-type: none"> ✓ Use egg (colloid foam) as a raising agent – create a gas-in-air foam – whisking egg whites, whisked sponge, ✓ Use chemical raising agents – self-raising flour, baking powder ✓ Use steam in a mixture (choux pastry, batter) 			

<p>Dough</p> <ul style="list-style-type: none"> ✓ Use the technical skills of shortening, gluten formation, fermentation (proving) for bread, pastry, pasta ✓ Roll out pastry, use a pasta machine, create layers (palmiers), proving/resting ✓ Glazing and finishing such as pipe choux pastry, bread rolls, pasta, flat breads, pinwheels, pizza, calzone 			
<p>Judge and manipulate sensory properties</p> <ul style="list-style-type: none"> ✓ Taste and season during the cooking process, change the taste and aroma through the use of infusions, herbs and spices, paste, jus, reduction ✓ Change texture and flavour, use browning (dextrinisation) and glazing, add crust, crisp and crumbs ✓ Presentation and food styling – use garnishes and decorative techniques to improve the aesthetic qualities, demonstrate portioning and presenting 			