

<p>Carbohydrates</p> <ul style="list-style-type: none"> • starch (polysaccharides) • sugars (monosaccharides/ disaccharides) • dietary fibre • the functions • main sources • effects of deficiency and excess • related dietary reference values 								
<p>Micronutrients</p> <p>Vitamins - Fat soluble</p> <p>vitamin A, vitamin D , vitamin E and vitamin K</p> <ul style="list-style-type: none"> • the functions • main sources • effects of deficiency and excess • related dietary reference values 								
<p>Vitamins - Water soluble</p> <ul style="list-style-type: none"> • B group – B1 (thiamin), B2 (riboflavin) , B3 (niacin), folic acid, B12 • vitamin C (ascorbic acid) • loss of water soluble vitamins when cooking (B group and Vitamin C) • the functions • main sources • effects of deficiency and excess • related dietary reference value 								
<p>Antioxidant functions of vitamins</p> <ul style="list-style-type: none"> • vitamin A • vitamin C • vitamin E • The role of antioxidants in protecting body cells from damage. 								

<p>Minerals</p> <ul style="list-style-type: none"> • calcium • iron • sodium (salt) • fluoride • iodine • phosphorus • the functions • main sources • effects of deficiency and excess • related dietary reference values. 								
<p>Water</p> <ul style="list-style-type: none"> • The importance of hydration and the functions of water in the diet • functions of water to eliminate waste from the body, cooling and for digestion • how water is lost from the body • how much water/fluid is needed each day • occasions when extra fluids are needed. 								
<p>Nutritional needs and health</p> <ul style="list-style-type: none"> • Making informed choices for a varied and balanced diet • the current guidelines for a healthy diet • portion size and costing when meal planning • how peoples' nutritional needs change and how to plan a balanced diet for different life stages • how to plan a balanced meal for specific dietary groups • how to maintain a healthy body weight throughout life. • the current guidelines for a healthy diet eg eatwell plate • nutritional needs for the following life stages: young children, teenagers, adults and the elderly 								

<ul style="list-style-type: none"> • how to plan a balanced meal for specific dietary groups: vegetarian and vegan, coeliac, lactose intolerant and high fibre diets 								
<p>Energy needs</p> <ul style="list-style-type: none"> • the basal metabolic rate (BMR) and physical activity level (PAL) and their importance in determining energy requirements • the recommended percentage of energy intake provided by protein, fat and carbohydrates (starch and sugar). • factors which affect the BMR, such as age, gender and PAL. Their importance in achieving energy balance • the percentage of recommended energy sources from nutrients: <ul style="list-style-type: none"> ○ protein 15% ○ fat 35% or less <p>carbohydrate 50% (of which 45% from starches, lactose in milk and fruit sugars and a maximum of 5% from free sugars</p>								
<p>How to carry out nutritional analysis</p> <p>How to use current nutritional information and data, eg food tables, nutritional analysis software to calculate energy and nutritional value.</p>								
<p>Diet, nutrition and health</p> <ul style="list-style-type: none"> • the relationship between diet, nutrition and health <p>the major diet related health risks</p> <p>how diet can affect health and how nutritional needs change in relation to:</p> <ul style="list-style-type: none"> • obesity • cardiovascular health (coronary heart disease (CHD) and high blood 								

<p>pressure)</p> <ul style="list-style-type: none"> • bone health (rickets and osteoporosis) • dental health • iron deficiency anaemia <p>Type 2 diabetes.</p>								
<p>Food science</p> <p>Cooking of food and heat transfer</p> <p>Why food is cooked and how heat is transferred to food</p> <ul style="list-style-type: none"> • the reasons why food is cooked • the different methods of heat transfer. • food is cooked to: <ul style="list-style-type: none"> ○ make food safe to eat ○ develop flavours ○ improve texture ○ improve shelf life ○ give variety in the diet • how preparation and cooking affect the appearance, colour, flavour, texture, smell and overall palatability of food • how heat is transferred to food through: <ul style="list-style-type: none"> ○ conduction ○ convection ○ radiation. 								
<p>Selecting appropriate cooking methods</p> <p>Selection of appropriate preparation, cooking methods and times to achieve desired characteristics.</p> <ul style="list-style-type: none"> • how the selection of appropriate preparation and cooking methods can conserve or modify nutritive value or improve palatability: <ul style="list-style-type: none"> • water based: steaming, boiling, simmering, blanching, poaching, braising • dry methods: baking, roasting, grilling, dry frying 								

<ul style="list-style-type: none"> fat based: shallow frying, stir fry how preparation and cooking affect the appearance, colour, flavour, texture, smell and overall palatability of food eg the use of marinades to denature protein 								
<p>Functional and chemical properties of food</p> <p>Proteins</p> <ul style="list-style-type: none"> protein denaturation protein coagulation gluten formation foam formation the scientific principles underlying these processes when preparing and cooking food the working characteristics, functional and chemical properties of proteins. 								
<p>Carbohydrates</p> <ul style="list-style-type: none"> gelatinisation dextrinisation caramelisation the scientific principles underlying these processes when preparing and cooking food the working characteristics, functional and chemical properties of carbohydrates. 								
<p>Fats and oils</p> <ul style="list-style-type: none"> shortening aeration plasticity emulsification the scientific principles underlying these processes when preparing and cooking food the working characteristics, functional and chemical properties of fats and 								

oils.								
Fruit and Vegetables <ul style="list-style-type: none"> • enzymic browning • oxidation. • the scientific principles underlying these processes when preparing and cooking food 								
Raising agents <ul style="list-style-type: none"> • chemical (baking powder, bicarbonate of soda, selfraising flours which produce carbon dioxide) • mechanical (whisking, beating, folding, sieving, creaming and rubbing in – all incorporate air into the mixture) • steam is produced when the water in any moist mixture reaches boiling point • biological (yeast). • the scientific principles underlying these processes when preparing and cooking food • the working characteristics, functional and chemical properties of raising agents 								
Food safety Food spoilage and contamination Microorganisms and enzymes <ul style="list-style-type: none"> • the growth conditions for microorganisms and enzymes and the control of food spoilage • bacteria, yeasts and moulds are microorganisms • high risk foods • enzymes are biological catalysts 								

<p>usually made from protein</p> <ul style="list-style-type: none"> • growth conditions for microorganisms: role of temperature, moisture, food and time • control of microorganism growth: temperature control, pH, water availability • high risk foods: ready to eat moist foods, usually high in protein that easily support the growth of pathogenic bacteria and do not require any further heat treatment or cooking • control of enzymic action: blanching of vegetables before freezing, use of acids to prevent enzymic browning 								
<p>The signs of food spoilage</p> <ul style="list-style-type: none"> • enzymic action • mould growth • yeast action. • enzymic action: ripening of bananas, browning of some fruits • mould growth: eg on bread and cheese. Recognise the signs of mould growth on foods • yeast action on fruits eg grapes, strawberries and tomatoes. 								
<p>Microorganisms in food production</p> <ul style="list-style-type: none"> • The use of microorganisms in food production. • moulds in the production of blue cheese • yeasts to raise bread • bacteria in yoghurt and cheese production. • 								

<p>Bacterial contamination</p> <ul style="list-style-type: none"> • the different sources of bacterial contamination • the main types of bacteria which cause food poisoning • the main sources and methods of control of different food poisoning bacteria types • the general symptoms of food poisoning <p>Contamination from:</p> <ul style="list-style-type: none"> • other contaminated foods including the following raw foods: meat, poultry, eggs, seafood and vegetables • work surfaces and equipment • the people cooking • pests • waste food and rubbish • campylobacter • e-coli • salmonella • listeria • staphylococcus aureus 													
<p>Principles of food safety</p> <p>All temperatures and guidance in accordance with current Food Standards Agency (FSA) guidelines.</p> <p>Buying and storing food</p> <ul style="list-style-type: none"> • temperature control: • freezing: -18°C • chilling: 0 to below 5°C • danger zone: 5 to 63°C • cooking: 75°C • reheating: 75°C • ambient storage • temperature danger zone • correct use of domestic fridges and 													

<p>freezers</p> <ul style="list-style-type: none"> • date marks • 'best before' and 'use by' dates • covering foods. 								
<p>Preparing, cooking and serving food</p> <p>The food safety principles when preparing, cooking and serving food.</p> <ul style="list-style-type: none"> • personal hygiene • clean work surfaces • separate raw and cooked foods and use of separate utensils • correct cooking times • appropriate temperature control including: defrosting and reheating appropriate care with high risk foods • correct use of food temperature probes. 								
<p>Food choice</p> <p>This section requires students to demonstrate their knowledge and understanding of the following subject content:</p> <p>Factors affecting food choice</p> <p>Factors which influence food choice</p> <ul style="list-style-type: none"> • To know and understand factors which may influence food choice. • the following factors in relation to food choice: <ul style="list-style-type: none"> ○ physical activity level (PAL) ○ celebration/occasion ○ cost of food ○ preferences ○ enjoyment 								

<ul style="list-style-type: none"> ○ food availability ○ healthy eating ○ income ○ lifestyles ○ seasonality ○ time of day ○ time available to prepare/ cook. <ul style="list-style-type: none"> • Students must be able to cost recipes and make modifications 								
<p>Food choices</p> <p>Food choice related to religion, culture, ethical and moral beliefs and medical conditions</p> <ul style="list-style-type: none"> • food choice linked to the following religions and cultures: Buddhism, Christianity, Hinduism, Islam, Judaism, Rastafarianism and Sikhism • food choice linked to the following ethical and moral beliefs: animal welfare, fairtrade, local produce, organic, Genetically Modified (GM) foods • food choice linked to food intolerances (gluten and lactose) and the following allergies: nuts, egg, milk, wheat, fish and shellfish. 								
<p>Food labelling and marketing influences</p> <ul style="list-style-type: none"> • How information about food available to the consumer, including labelling and marketing, influences food choice. • mandatory information included on food packaging in accordance with current European Union and Food 								

<p>Standards Agency (FSA) legislation</p> <ul style="list-style-type: none"> • non-mandatory information: provenance, serving suggestions • how to interpret nutritional labelling • how food marketing can influence food choice eg buy one get one free, special offers, meal deals, media influences, advertising, point of sales marketing. 								
<p>British and international cuisines</p> <ul style="list-style-type: none"> • food products from British tradition and two different cuisines • schools or colleges/students can select different cuisines to study. • Cuisine is defined as: ‘a style characteristic of a particular country or region where the cuisine has developed historically using distinctive ingredients, specific preparation and cooking methods or equipment, and presentation or serving techniques’. • distinctive features and characteristics of cooking • equipment and cooking methods used • eating patterns • presentation styles • traditional and modern variations of recipes. 								
<p>Sensory evaluation</p> <ul style="list-style-type: none"> • sensory testing methods • how taste receptors and olfactory systems work when tasting food. <p>importance of senses when making food choices: sight, taste, touch and aroma</p> <ul style="list-style-type: none"> • preference tests: paired preference, 								

<p>hedonic</p> <ul style="list-style-type: none"> • discrimination tests: triangle • grading tests: ranking, rating and profiling • how to set up a taste panel • controlled conditions required for sensory testing • evaluating how senses guide • evaluating a wide range of ingredients and food from Britain and other countries • how to test sensory qualities of a wide range of foods and combinations. 								
<p>Food provenance Environmental impact and sustainability of food. Food Sources. Where and how ingredients are grown, reared and caught. grown ingredients: fruits, vegetables and cereals</p> <ul style="list-style-type: none"> • reared ingredients: meat and poultry • caught ingredients: fish <p>an understanding of:</p> <ul style="list-style-type: none"> • organic and conventional farming • free range production • intensive farming • sustainable fishing <p>advantages and disadvantages of local produced foods, seasonal foods and Genetically Modified (GM) foods.</p>								
<p>Food and the environment Environmental issues associated with food</p>								

<ul style="list-style-type: none"> • seasonal foods • sustainability eg fish farming • transportation • organic foods • the reasons for buying locally produced food • food waste in the home/food production/retailers • environment issues related to packaging • carbon footprint. 								
<p>Sustainability of food</p> <p>The impact of food and food security on local and global markets and communities.</p> <p>The challenges to provide the world's growing population with a sustainable, secure, supply of safe, nutritious and affordable high quality food. Students must have an awareness of:</p> <ul style="list-style-type: none"> • climate change • global warming • sustainability of food sources • insufficient land for growing food • availability of food • fairtrade • problems of drought and flooding • Genetically Modified (GM) foods • food waste. 								
<p>Food processing and production</p> <p>Food production</p> <ul style="list-style-type: none"> • Primary and secondary stages of 								

<p>processing and production</p> <ul style="list-style-type: none"> • How processing affects the sensory and nutritional properties of ingredients • primary processing related to the: rearing, fishing, growing, harvesting and cleaning of the raw food material (milling of wheat to flour, heat treatment of milk, pasteurised, UHT, sterilised and micro-filtered milk) • secondary processing related to: how the raw primary processed ingredients are processed to produce a food product (flour into bread and/ or pasta, milk into cheese and yoghurt, fruit into jams) • loss of vitamins through heating and drying • the effect of heating and drying on the sensory characteristics of milk. 								
<p>Technological developments associated with better health and food production</p> <p>Technological developments to support better health and food production including fortification and modified foods with health benefits and the efficacy of these.</p> <ul style="list-style-type: none"> • 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 								

<p>low fat spreads</p> <ul style="list-style-type: none">• the positive and negative aspects of the use of additives: colourings, emulsifiers and stabilisers, flavourings, and preservatives• the positive and negative aspects of Genetically Modified (GM) foods.								
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Review of previous examinations: