Now test yourself answers

Section A

Topic 1 The relationship between diet and health

A balanced diet to provide the correct combination of food and nutrients for good health

1 Fruits and vegetables, potatoes, bread, rice, pasta or other starchy carbohydrates.

2 Pictorial guide showing proportions of food which should be eaten, visual so can easily be understood, gives examples of foods which fit into each section, it provides additional information on foods high in fats and sugar, hydration and food labelling.

3 Any named vegetable oil, spreads made from unsaturated fat.

4 Fresh, dried or frozen fruits and vegetables, milk, cheese and natural yogurt.

5 Sugar, honey, brown sugar, dextrose, fructose, maltose, sucrose, fruit juice concentrate, corn syrup, molasses.

The government's guidelines for a healthy diet

1 Base your meals on starchy foods, eat lots of fruit and vegetables, eat more fish – aim for 2 portions a week and one of these should be oily, cut down on saturated fat and sugar, eat less salt, adults should eat no more than 6g per day, get active and try to maintain a healthy weight, don't get thirsty – drink plenty of water, don't skip breakfast.

2 Ensures a variety of vitamins, minerals, trace elements and fibre are in the diet, promotes the inclusion of antioxidants and plant chemicals needed for good health.

Major diet-related health issues caused by a poor diet and lifestyle

1 Obesity, low levels of exercise, smoking, family history of heart disease, high blood pressure, raised levels of cholesterol.

2 Eat a varied diet, eat more fruit and vegetables, eat more starchy carbohydrates, have fish instead of meat, use unsaturated fats, reduce the amount of fat used in cooking.

3 Type 1 – caused by the pancreas not producing enough insulin. Type 2 – caused by a poor diet.

4 Pain in the abdomen, bloating, infection in the lining of the bowel, inflammation of the bowel.

5 Genes, age, gender – women, smoking, low body weight, previous fractures, some medicines, high alcohol consumption.

6 Bacteria in mouth feed on sucrose found in food. Acid is produced which causes holes in the teeth.

7 Teenagers, pregnant women, vegans, vegetarians.

Topic 2 Nutritional and dietary needs of different groups of people

Dietary needs for different stages of life

1 Some occupations require more physical energy to carry out the tasks e.g. builder / fire fighter. More food is required to provide the energy needed, e.g. foods containing complex carbohydrates.

2 To prevent anaemia.

3 It gives the correct proportion of the food groups and shows clear examples of foods to include.

4 Calcium and vitamin D is needed for the woman's own and baby's bone and tooth development. Folic acid is needed to make new cells in the developing baby; supplements should be taken during early pregnancy. A good supply of fruit and vegetables will provide fibre and vitamin C; Consider methods of cooking in order to retain vital nutrients e.g. steaming to retain vitamin C. Iron is needed for the baby to develop their blood supply. Protein is needed for growth of the baby. Reference to Eatwell Guide for a varied balanced diet; not too many fatty and sugary foods – so that the pregnant woman does not put on weight, not too many salty foods as this can result in sweating or pre-eclampsia.

Food allergies and intolerances

1 Food may be made on a production line where nuts have been used even if nuts are not in the product. This can cause allergic reaction / anaphylactic reaction.
2 Intolerance to gluten, which can be found in cereals e.g. wheat oats, causes abdomen pain, diarrhoea, anaemia. It damages the intestine meaning nutrients cannot be absorbed.
3 Rice based products, potato based products, gluten free varieties of bread.
4 Soya, oat, almond milk.

Dietary reference values and calculating nutritional values

1 To provide information for consumers; help consumers understand the amount of energy and nutrients in food; linked to reducing illness linked to poor diets e.g. CHD, obesity.
2 30g.
3 State the recommended amount of energy which should come from:
(a) 50%
(b) No more than 30%
(c) No more than 5%
(d) No more than 11%

Topic 3 Nutritional needs when selecting recipes for different groups of people

1 To reduce fat, reduce sugar, reduce salt, increase fibre.
2 Some methods do not use fat e.g. grilling, baking, therefore fat is not added so the calories are not increased; Grilling – fat drains away from the food therefore the amount of fat in the food is reduced; some methods help retain nutrients e.g. vitamin C when steaming vegetables. Water soluble vitamins are destroyed easily, therefore liquid the food has been cooked in should be served with the food.
3 Bacon/ham, smoked meats, cheese, pickles, salami, salted and dry roasted nuts, salt / smoked fish, soy sauce, gravy granules / stock cubes / yeast extract.
4 Incorporate extra vegetables into recipes e.g. soups, casseroles; use whole grain cereal products e.g. wholemeal pasta, wholemeal bread, brown rice as the bran is not removed; substitute all or half and half wholemeal flour for white flour; choose breakfast cereals which are wholegrain; add fresh or dried fruit to puddings cakes and biscuit recipes; have dried fruit, nuts and seeds as snacks add seeds such as sunflower and flax seeds to crumble toppings, bread, breakfast cereals, biscuit and cake mixtures.

Topic 4 Energy balance

1 Heart beating, organs working correctly, warmth, muscles to work, for chemical reactions to happen, allow movement, store of energy.
2 Age, gender, health, pregnancy, lactating women, activity levels/occupation.
3 Energy used for all bodily functions – breathing, warmth, nerves, brain cells, digestion.
4 Energy used for all movement other than those essential for life/bodily functions.
5 They are stored as fat.

Topic 5 Protein

1 Growth; repairs the body; renewal of cell proteins; enzymes vital for life, making some hormones, secondary source of energy.
2 Essential for life; they cannot be made by the body therefore have to be provided by food eaten.
3 Soya, Quorn – if it includes egg white or soya.
4 Children, teenagers, pregnant women.
5 Toddler – meat, fish, eggs, milk, cheese, vegetable sources, peas, beans, lentils, Quorn, soya. Lacto-vegetarian – milk, cheese, dairy products, vegan Quorn (does not contain egg white), vegetable sources, peas, beans, lentils. Ovo-vegetarian – eggs, vegetable sources, peas, beans lentils, Quorn, soya. Older person – meat, fish, eggs, milk, cheese, vegetable sources, peas, beans, lentils, Quorn, soya.

Topic 6 Fats

1 They form part of the structure of cells; they insulate the body; protect vital organs; a source of the fat-soluble vitamins; promote a feeling of satiety.
2 Saturated fats are completely surrounded by hydrogen atoms/unsaturated have at least one which is not surrounded by a hydrogen atoms. Unsaturated fats have double bonds/saturated do not. Saturated fats are found mainly in animal fats.
3 They look attractive; they're easy to swallow; they often have a shiny appearance.
4 Causes obesity; coronary heart disease; high blood pressure; diabetes; strokes; some cancers.
5 The body cannot make them so they have to be obtained from the foods we eat.

6 Choosing reduced fat options e.g. milk, cheese; follow the Eatwell Guide; read food labels on packaging; avoid frying / use cooking methods which do not include the addition of additional fat; trim the excess fat off meat.

Topic 7 Carbohydrates

1 Energy for physical activity, energy to maintain bodily functions, provide dietary fibre (non-starch polysaccharide (NSP)); to help digestion.

2 Free sugars are sugars added to foods and drinks by manufacturers, cooks or consumers, and also sugars found naturally in honey, syrups and fruit juice. These are the ones which we should be reducing. Sugars found for example in fruits and vegetables (fresh, frozen or dried) and in milk and products such as plain yogurt and cheese are not free sugars – these foods contain other nutrients which are essential in our diet.

3 Holds water and keeps the faeces soft and bulky; helps prevent various bowel disorders, (constipation, bowel cancer, diverticular disease, appendicitis and haemorrhoids); can help people to control their body weight because they are filling; helps to lower blood cholesterol; helps reduce the risk of diabetes.

4 Soluble fibre – oats, peas, beans, lentils, most types of fruit and vegetables. Insoluble fibre – wholemeal flour, wholegrain breakfast cereals and pasta, brown rice, and some fruits and vegetables.

Topic 8 Vitamins

1 **(a)** Vitamin A
(b) Vitamin B1, thiamine, vitamin B2, riboflavin
(c) Vitamin C
(d) Folic Acid, folate, vitamin B9

2 Vitamin C.

3 Vitamin A/retinol/beta carotene, vitamin D/ cholecalciferol, vitamin E, vitamin K.

4 **(a)** Vitamin B1/thiamine, vitamin B2/riboflavin, vitamin B3/niacin, vitamin B12/cobalamin
(b) Vitamin A/retinol, vitamin D/cholecalciferol, vitamin B3/niacin, vitamin B12/cobalamin
(c) Vitamin C/ascorbic acid
(d) Vitamin B1/thiamine
(e) Vitamin A/retinol, Vitamin B1/thiamine, vitamin B2/riboflavin
(f) Vitamin B2/riboflavin, vitamin B12/cobalamin
(g) Vitamin K, Vitamin B2/riboflavin, vitamin C/ ascorbic acid.

Topic 9 Minerals

1 **(a)** Calcium, phosphorus
(b) Iron

2 **(a)** Calcium, phosphorus, sodium, iodine
(b) Iron
(c) Fluoride

3 **(a)** Rickets, osteomalacia
(b) Anaemia.

Topic 10 Water

1 6–8 glasses.

2 Regulates the body's temperature (cools us/ prevents heat stroke); helps the kidneys flush out harmful substances from our blood; transports nutrients, oxygen and carbon dioxide round the body; nearly all body processes (digestion / remove waste products from the body); prevents dehydration.

3 Headaches; dark coloured urine; feeling weak; feeling sick; being confused; quick heartbeat; changes in blood pressure.

4 Any named fruit or vegetable.

5 Kidneys do not function properly; headaches; nausea; vomiting.

Topic 11 Nutrients in foods

Potatoes, bread, rice, pasta and other starchy foods

1 Fibre, B vitamins, starch, low biological value protein, vitamin E, fat, iron.

2 Pasta, bread.

3 Calcium, iron, thiamine, niacin.

4 Vitamin A.

5 Oats.

Fruit and vegetables

1 Fruits – blackcurrants, rosehips, strawberries, gooseberries, raspberries, citrus fruits. Vegetables – sprouts, cabbage, spinach, green peppers, watercress, bean sprouts, potatoes.

2 Sucrose, fructose.

3 Soya.

4 Good source of fibre, do not contain sugar, naturally low in fat, contains antioxidants, low in calories, names specific vitamins/minerals and their function.

5 Peas, lentils any named bean except soya.

Dairy and dairy alternatives

1 Protein/high biological value protein, carbohydrate / lactose, fat, calcium, phosphorus, vitamin A, B1 and B3.

2 Vitamin A is fat soluble vitamin. It is found in the fat in the milk so when the fat is removed the vitamin A is removed.

3 Soya milk, Oatly, almond milk, rice milk. Meat, fish, eggs, beans, pulses and other proteins

Beans and non-dairy sources of protein

1 Collagen, elastin.

2 Any named B vitamin.

3 Meat contains more fat – supplies more energy in the diet/link to consequences of having a diet high in fat. Meat contains more iron – link to function of iron in diet/deficiency anaemia.

4 Oily fish contains more fat – including essential fatty acids which the body cannot make so have to be got from foods. Some fish also have more vitamin D and calcium because the bones of the fish are eaten e.g. sardines, sprats – link to functions of calcium – strong bones and teeth.

5 Two.

6 Protein – growth, repair, maintenance, secondary source of energy.

Fat – energy, protects vital organs.

Vitamin A – healthy eyes.

Iron – production of haemoglobin, prevents anaemia.

B Vitamins – release of energy from foods.

7 All contain protein, soya high biological value protein. Usually low in fat – link to needing to reduce the amount of fat we eat – link to consequences of diet high in fat. Provide carbohydrate in the form of starch for energy and fibre – healthy digestive system.

Food high in fats and/or sugar

1 Fats are solid, oils are liquid.

2 Vitamin A, vitamin D.

3 Saturated fat.

4 Butter, suet, lard.

5 Carbohydrate

Section B

Topic 1 Food source and supply

1 **Wheat** – baked products, made into pasta, semolina, couscous, breakfast cereals e.g. Shreddies, Weetabix, Shredded Wheat.

Rice – used as an accompaniment to savoury dishes, risotto, in milk puddings, flour, breakfast cereals.

Maize – breakfast cereals, polenta, cornflour, corn oil, eaten as a vegetable, corn on the cob or can be frozen or canned.

Oats – oatmeal, jumbo oats, porridge oats, oat flakes, flap jack, crumbles, porridge, breakfast cereals e.g. muesli, Oatly (a milk alternative).

Barley – alternative to rice, made into malt extract, used in soups and stews, animal feed, used in the brewing industry.

Rye – flour, rye bread.

2 Sugar cane – tall bamboo grass, grown in the tropical countries.

Sugar beet – root crop grown in northern hemisphere.

3 Leaves – cabbage, Brussels sprouts, spinach, watercress, lettuce.

Fruit – cucumber, marrow, aubergine, peppers, squash.

Roots – carrots, beetroot, swede, turnip, parsnip, radish.

Flowers – cauliflower.

Bulbs – onions, leeks.

Stems – celery.

Tuber – potatoes, sweet potatoes, yam.

Seeds, pods – peas, beans.

4 Advantages – fresher, less food miles, reduced carbon footprint, less energy used in transporting, supports local farmers/UK farmers.

Disadvantages – may not be as much choice, some people do not like the food being different sizes, is sometimes more expensive.

5 Organic food is grown without synthetic fertilisers, pesticides and herbicides or any other artificial ingredient, it will not contain any genetically engineered ingredients, they are concerned about animal welfare – organic food comes from animals that are given no antibiotics or growth hormones, it's considered to taste nicer, avoids the risk of a combination of chemicals and respect soil structure and wildlife.

6 Farms and food companies with the Red Tractor logo have high standards of food safety and hygiene, animal welfare and environmental protection.

7 Advantages – protected from predators and weather changes, fish cannot escape, fish are produced faster and in higher quantities, lower transport costs, wild fish stocks are not depleted.

Disadvantages – high setting up and running costs, waste created by the fish can pollute and damage the surrounding marine environment, fish may be fed pellets made from less valuable fish, sterile water, pesticides and antibiotics may be used to control diseases, drugs used in outdoor fish farms used can pollute the surrounding water, may be more disease as the fish live so close together, may be more disease as the fish may be closely related because they are selectively bred.

Topic 2 Food processing and production

1 Primary processing – changing a basic food to preserve it or to prepare it for sale or cooking e.g. milling wheat into flour, heat treating milk, extracting oil from crops.

Secondary processing – primary processed foods are made into other products e.g. making wheat in to pasta, bread, biscuits and other flour based products, making milk into cheese, butter and yogurt.

2 The percentage of the grain used in the four.

3 Iron, calcium, thiamine and niacin.

4 Ultra heat treatment, sterilisation, pasteurisation, canning.

5 Blast – fish, ready meals, meat joints, chicken, pizza, cakes, desserts.

Fluidised bed – Peas, beans, raspberries.

Plate – Fish, ready meals.

Cryogenic freezing – raspberries, prawns, strawberries.

Topic 3 Food security

1 All people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.

2 Producers get paid a fair price for the product, they can support health and education programmes in the countries, workers have improved working conditions.

3 Improvements to quantity and quality of food, food can grow in adverse conditions e.g. drought, crops can be herbicide and insect-resistant, cheaper to produce.

4 Too much food is prepared and cooked, we purchase too much, we do not use the food in time.

5 Buy fresh local produce, cook fresh meals, use seasonal UK ingredients, reduce your consumption of meat, consider the methods of cooking.

Topic 4 Technological developments to support better health and food production

1 Foods have nutrients added to them to increase their nutritional value. Some are added by law to foods.

2 **(a)** Replace colour lost during heat treatment. Improve the colours already in foods.

(b) Extend shelf life of food. Prevent the growth of micro-organisms.

(c) Helps to prevent fat becoming rancid. Prevent some foods from going brown.

3 Can be used in a wide range of food products, improve a specific characteristic, produce expected qualities in foods, allow product range e.g. flavoured crisps, maintain product consistency in production, restore original characteristics of a food after processing, prevent food spoilage and give food a longer shelf life, disguise inferior ingredients.

4 Some people may have an allergy to additives. The long term effects of additives on the body in unknown.

5 Functional foods have health-promoting benefits over and above their basic nutritional value.

Topic 5 Development of culinary traditions

1 Island surrounded by sea water, plenty of land to grow and rear food, sufficient energy to cook food, climate, history, trends e.g. to use British grown and seasonal foods.

2 Wheat – any named food product e.g. bread, cakes, pastry.

Potato – any named food product e.g. Shepherd's pie, cottage pie, leek and potato soup.

3 Accept any relevant country with staple food and relevant dish examples of staple foods.

4 Accept any relevant celebration and traditional dish.

5 Shops sell a wide variety of ingredients (fresh and dried) from abroad, ready meals, sauces which are convenient to use without buying all the individual ingredients.

Topic 6 Factors influencing food choice

1 Cost, enjoyment, personal preference, food seasons, availability of food, storage and cooking facilities, time of day, activity and lifestyle, health and medical reasons, marketing, food labelling, food scares.

2 Buddhism, Islam, Hinduism, Sikhism.

3 Ovo-lacto vegetarians will not eat anything from animals which involves the animal being killed, but will eat eggs and dairy. A lacto vegetarian is the same as an ovo-lacto vegetarian but won't eat eggs.

4 Supports local farmers and industry, may have a lower carbon footprint, reduced food miles, may be fresher.

5 May taste better, concerned about the use of chemical pesticides on crops, chemicals may harm their health, effect the use of chemicals can have on the environment.

Section C

Topic 1 Food science

1 To destroy harmful bacteria – this includes yeasts, moulds and bacteria; to make food less bulky – volume is reduced; to improve the keeping quality of food – preserved to make it last longer; to make it easier to digest – the structure is changed so it can be digested; to develop flavour – heat develops the flavour of the ingredients; to destroy natural poisons in food – to make food safe to eat; to have hot food in cold weather – to provide a 'feel good' factor and to maintain body temperature; to make it more colourful and attractive – many foods change colour when they are cooked; textures are changed – giving more variety in the diet; variety in the diet – we can cook foods in different ways; aroma in food is released – this helps stimulate the digestive juices.

2 Conduction – heat is transferred by contact with heat – baking, blanching, boiling, braising, casserole, frying, microwaving, poaching, roasting, simmering.

Convection – heat moves through the convection currents, the hot air rises and cool air falls – baking, blanching, boiling, braising, casserole, frying, poaching, roasting, simmering, steaming.

Radiation – direct rays pass from the heat source to the food – barbecuing, char grilling, microwaving.

3 Any named B vitamin and vitamin C.

4 It reduces the fat content of food, so it is a healthier way of cooking food.

5 Thickening of starch, for example in sauces.

6 It coagulates and sets.

7 Foods go brown when they have been cut as the food reacts with the oxygen.

8 Baking powder, bicarbonate of soda, self-raising flour.

9 Sieving flour, rubbing in flour, creaming fat and sugar together, beating mixtures, folding and rolling, whisking.

Topic 2 Sensory properties

1 Taste, sight, sound, smell, touch.

2 Three samples given to the tasters. Two are the same and one is different. Tasters identify the odd one out.

3 So that consumers cannot tell an order by numbers or letters. This makes testing more reliable.

4 **(a)** Sundried tomato and cheese flavour

(b) Sundried tomato flavour – add more tomatoes

Cheese flavour – use a stronger flavoured cheese, mature cheddar or parmesan cheese

(c) Star profile, written report, spread sheet.

Topic 3 Food safety

1 Food, warmth, moisture, time.

2 Moist conditions, correct temperature of 20–30 °C, foods that are dry, moist, acid, alkaline, or has salt or sugar concentrations.

3 Refrigerator below 5 °C and freezer –18 °C.

4 Bacteria transferred from raw to cooked food either by direct or indirect transfer.

5 Poor personal food hygiene practices, cross contamination between raw and cooked foods, high risk foods are stored at room temperature, undercooking high risk foods, not reheating foods to the correct temperature or for long enough, foods are not stored at the correct temperatures.

Section D

Topic 1 Knife skills

1 It has a flexible blade, therefore it is easier to move the meat from the bone.

2 Lifting foods from trays, turning food over, mixing liquid in to mixtures.

3 It is a safe way of working.

Topic 2 Preparation and techniques

1 To add additional flavour, to tenderise the meat.
2 It is a high risk food, good hygiene is needed to prevent cross contamination whether direct or indirect.
3 It should have a sea/fresh smell, flesh should be moist and firm, scale should be shiny.
4 Loss of vitamin C.
5 Dipping fruit into lemon juice, cooking as soon as they have been prepared.

Topic 3 Cooking methods

1 Boiling, steaming, simmering, poaching, braising, casserole.
2 Gentle/delicate method of cooking, prevents the food breaking up, keeps it shape. Moist method of cooking prevents the fish drying out.
3 Microwaves penetrate foods, molecules in the food vibrate, this causes friction, which produces heat.
4 **Advantages**: food is cooked quickly, no added fat, fat drains off food whilst cooking.

Disadvantages: not suitable for tough cuts of meat, timing needs to be managed so foods are not overcooked.

Topic 4 Sauces

1 Roux, blended, all-in-one.
2 Gelatinisation.
3 Fat too hot when the flour was added; roux was not cooked enough; liquid added too quickly and not stirred sufficiently; not stirred during cooking.
4 Egg yolk.

Topic 5 Set a mixture

1 Cornflour.
2 Gelatinisation.
3 Protein easily overcooks and coagulates, protein becomes tough – syneresis occurs.
4 Egg yolk 70 °C, egg white 60 °C.

Topic 6 Raising agents

1 Air – whisked sponge; Self raising flour – Victoria sandwich cake, buns; Baking powder – Victoria sandwich cake, buns, scones; Bicarbonate of soda – gingerbread / parkin.
2 Self-raising flour – contains the raising agent, bulk, provides the crumbly texture – fat coats the flour grains and prevents gluten developing; Milk – binds the ingredients together; Butter – flavour, colour, coats the flour grains to prevent gluten developing.
3 Mixture too thick, oven not hot enough.

Topic 7 Dough

1 High gluten content, the gluten stretches when kneaded which allows the bread to rise and set in its risen state.
2 Shortcrust – rubbed into the flour.

Flaky – 1/4 rubbed into the flour. Remainder added onto the pastry as it is rolled and turned.

Rough puff – added in small pieces before mixing in the liquid.

Choux – melted and brought to the boil with the water.
3 Keep equipment and ingredients cool, roll pastry in one direction, rest between folding, mix the dough together quickly and lightly, use lightly floured surface and a rolling pin when rolling out, handle the dough as little as possible.
4 Herbs, spinach, tomato, olive oil.
5 Glazes improve the colourful appearance of the food.

Topic 8 Judge and manipulate sensory properties

1 Check the seasoning, sweetness, spiciness, texture, mouth feel.
2 Add colour, texture, additional flavour, additional nutritive value, to protect the food.
3 Decorate the edges of the pastry – fluting, using a fork, adding pastry decorations e.g. leaves, using a glaze e.g. egg wash or milk, addition of seeds on the top e.g. sesame.
4 Is it the correct portion size for the meal/ occasion/who is eating it?

Is it presented attractively on the serving dish?

Are the correct accompaniments included?

Is the food served at the correct temperature?