FOOD PREPARATION AND NUTRITION

- Your NEA1 and NEA 2 completed between September and March of year 11 contribute 50% to your final grade.
- Your written exam contributes 50% to your final grade.

THE CONTENT YOU NEED TO COVER FOR YOUR FINAL WRITTEN EXAMINATION IS LISTED BELOW:

1. Food commodities

The range of foods and ingredients to be studied throughout the course should come from the major commodity groups (as shown below) and reflect current recommended guidelines for a healthy diet, e.g. reduction of sugar intake.

- bread, cereals, flour, oats, rice, potatoes, pasta
- fruit and vegetables (fresh, frozen, dried, canned and juiced)
- milk, cheese and yoghurt
- meat, fish, poultry, eggs
- soya, tofu, beans, nuts, seeds
- butter, oils, margarine, sugar and syrup

For each food commodity learners need to know and understand:

- the value of the commodity within in the diet
- features and characteristics of each commodity with reference to their correct storage to avoid food contamination
- the working characteristics of each commodity, with reference to the skill group and techniques table listed in Appendix A, e.g. when subjected to dry/moist methods of cooking
- the origins of each commodity

For each food commodity learners need to be able to:

- experiment with the commodity to explore physical and chemical changes that occur as a result of given actions
- consider complementary actions of a commodity in a recipe
- prepare and cook dishes using the commodities

2. Principles of nutrition

Macronutrients and Micronutrients

Learners must know and understand:

- the definition of macronutrients and micronutrients in relation to human nutrition
- the role of macronutrients and micronutrients in human nutrition

Macronutrients are defined as a class of chemical compounds which humans consume in the largest quantities

(i) protein: to include essential amino acids in relation to nutritional requirements (histidine, isoleucine, lysine, leucine, methionine, phenylalanine, threonine, tryptophan, valine) and non-essential (alanine, asparagine, aspartic acid glutamic acid)
(ii) fats, oils and lipids: saturated fats, monounsaturated fats, polyunsaturated fats and essential fatty acids
(iii) carbohydrates: monosaccharides, disaccharides and polysaccharides

Micronutrients are required by humans throughout life in small quantities to facilitate a range of physiological functions

(i) fat soluble vitamins: vitamin A, and vitamin D water soluble vitamins: B vitamins: B1 thiamin B2 riboflavin, B3 niacin, B12 cobalamin and B9 folic acid (folate) and vitamin C
(ii) minerals: calcium, iron, potassium and magnesium (iii) trace elements, to include: iodine and fluoride

Learners must know and understand for each named macro nutrient and micronutrient:

- the specific function
- the main sources
- dietary reference values
- the consequences of malnutrition (over and under)
- complementary actions of the nutrients

Learners need to know and understand the dietary value of:

(i) water
(ii) dietary fibre (NSP)

3. Diet and good health

Energy requirements of individuals

Learners must know and understand:

- the recommended daily intake (RDI) and the percentage energy values of protein, fat and carbohydrates: monosaccharides (sugars) polysaccharides (starch) and non-soluble polysaccharides (dietary fibre) vitamins and minerals, for:

(i) a range of life-stages: toddlers, teenagers, early, middle and late adulthood
(ii) individuals with specific dietary needs or nutritional deficiencies to include coeliac disease; diabetes (type 2 diabetes only to be considered), dental caries; iron deficiency anaemia; obesity; cardiovascular disease (CVD); calcium deficiencies to include bone health; nut or lactose (dairy) intolerances
(iii) individuals with specific lifestyle needs to include vegetarians: lacto-ovo, lacto, vegan, and those with religious beliefs that affect choice of diet, to include Hindu, Muslim, Jewish

- how nutrients work together in the body, e.g. complementary actions
- basal metabolic rate (BMR) and physical activity level (PAL) and their importance in determining energy requirements

Learners must have a sound awareness of other common dietary issues including coronary heart disease (CHD), cholesterol and liver disease.

Plan balanced diets

Learners should be able to use their knowledge of nutrition and current nutritional guidelines to:

- recommend guidelines for a healthy diet
- identify how nutritional needs change due to age, life style choices and state of health
- plan a balanced diet for:

(i) a range of life-stages: toddlers, teenagers, early, middle and late adulthood
(ii) individuals with specific dietary needs or nutritional deficiencies to include coeliac disease; diabetes (type 2 diabetes only to be considered), dental caries; iron deficiency anaemia; obesity; cardiovascular disease (CVD) calcium deficiencies to include bone health; nut or lactose (dairy) intolerances
(iii) individuals with specific lifestyle needs to include vegetarians: lacto-ovo, lacto, vegan, and those with religious beliefs that affect choice of diet, to include Hindu, Muslim, Jewish
(iv) individuals requiring high energy needs as a result of occupation or activity involvement

Learners must have a sound awareness of other common dietary issues including coronary heart disease (CHD), cholesterol and liver disease.

Calculate energy and nutritional values of recipes, meals and diets

Learners should be able to:

- calculate the energy and main macronutrients and micronutrients in the following:

(i) a recipe
(ii) a meal
(iii) an individual's existing diet over a period of time

- use nutritional information/data to determine why, when and how to make changes to:

(i) a recipe, e.g. increase dietary fibre (NSP) content
(ii) a menu, e.g. reduce saturated fat content
(iii) a diet, e.g. to increase energy intake prior to a sporting activity or to meet the new recommendations for free sugars

- show how an understanding of energy balance can be used to maintain a healthy body weight throughout life

4. The science of food

The effect of cooking on food

Learners should have a theoretical and practical working knowledge and understanding of how preparation and cooking affects the sensory and nutritional properties of food. To include:

- why food is cooked, to include, digestion, taste, texture, appearance and to avoid food contamination
- how heat is transferred to food through conduction, convection and radiation and how and why the production of some dishes rely on more than one method of heat transference
- how selection of appropriate cooking methods can:

(i) conserve or modify nutritive value, e.g. steaming of green vegetables
(ii) improve palatability e.g. physical denaturation of protein

- the positive use of micro-organisms such as bacteria in dairy products: cheese, yoghurt; meat products: salami, chorizo and fermentation of sugar in drinks

Learners need to undertake experimental work and produce dishes by following or modifying recipes to develop and apply knowledge and understanding related to:

• the working characteristics, functional and chemical properties of ingredients to achieve a particular result:

(i) carbohydrates – gelatinisation, dextrinization
(ii) fats/oils – shortening, aeration, plasticity and emulsification
(iii) protein – coagulation, foam formation, gluten formation, denaturation (physical, heat and acid)
(iv) fruit/vegetables – enzymic browning, oxidisation

• reasons why particular results may not always be achieved, e.g. a sponge cake sinks, a sauce goes lumpy
• how to remedy situations when desired results may not be achieved in the first instance

Food spoilage

Learners should have a theoretical and practical working knowledge and understanding of sound microbiological food safety principles when buying, storing, preparing and cooking food. To include:

• how to store foods correctly: refrigeration/freezing, dry/cold storage, appropriate packaging/covering of foods
• the importance of date-marks, labelling of food products to identify storage and preparation
• the growth conditions, ways of prevention and control methods for enzyme action, mould growth and yeast production
• the signs of food spoilage, including enzymic action, mould growth, yeast production and bacteria
• the role of temperature, pH, moisture and time in the control of bacteria
• the types of bacterial cross-contamination and their prevention
• preservation/keeping foods for longer, e.g. jam making, pickling, freezing, bottling, vacuum packing

Learners should know and understand the signs, symptoms, risks and consequences of inadequate/unacceptable food hygiene practices. To include:

• signs, symptoms of food poisoning to include poisoning caused by salmonella, campylobacter, e-coli, staphylococcus

Learners should know and understand the consequences of mishandling of food on:

• food wastage: including the effect on the environment and the financial implications of waste

5 Where food comes from

Food provenance

Learners must know and understand:

• food origins to include where and how foods are grown, reared, or caught
• food miles, impact on the carbon footprint, buying foods locally
• impact of packaging on the environment versus the value of packaging
• sustainability of food: the impact of food waste on the environment, local, global markets and communities, effect of food poverty
• food security: access to safe sufficient food for all (World Health)

Learners should have a theoretical and practical working knowledge and understanding of the development of culinary traditions in British and international cuisine.

All learners should have the opportunity to explore and gain knowledge of foods and recipes from at least **two** international countries (these countries are at the discretion of the centre and do not have to significantly differ from the UK.) To include:

- the distinctive features, characteristics and eating patterns of different cuisines. 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.
- traditional and modern variations of recipes to include variations of recipes to include changing use of food commodities, changes to nutritional guidelines, and use of modern cooking methods and or equipment
- meal structures: presentation of menus within different cultures

Food manufacturing

Learners should have knowledge and understanding of:

- primary stages of processing and production to include point of origin, the transporting, cleaning and sorting of the raw food e.g. bags of fruit.
- secondary stages of processing and production to include how primary products are changed into other types of products, e.g. wheat to bread; milk to cheese and yoghurt; fruit to jams, jellies and juices.
- how processing affects the sensory and nutritional properties of ingredients e.g. cured meat products
- technological developments that claim to support better health and food production including fortification and modified foods
- the positive and negative effects of food modification on health and food production e.g. flavour intensifiers, stabilisers, preservatives, colourings, emulsifiers
- the ability of additives to produce the desired effect

6. Cooking and food preparation

Factors affecting food choice

Learners must know and understand:

- how sensory perception guides the choices that people make, how taste receptors and olfactory systems work
- the sensory qualities of a range of foods and combinations and how to set up tasting panels for preference testing
- the range of factors that influence food choices, including, enjoyment, preferences, seasonality, costs, availability, time of day, activity, celebration or occasion and culture
- the choices that people make about certain foods according to religion, culture, ethical belief, medical reasons or personal choices
- how to make informed choices about food and drink to achieve a varied and balanced diet, including awareness of portion sizes and costs
- how information about food is available to the consumer, including food labelling and marketing and how this influences food choice

Preparation and cooking techniques

Learners must be able to plan, prepare cook and serve a number of recipes.
Learners must be able to demonstrate skills from each skill group to include:

- planning for cooking:

(i) a single dish
(ii) a number of dishes in one session (to ensure a dovetailed action plan)

- preparation of ingredients to make a selection of recipes, e.g. weigh and measure liquids and solids, use knife skills, combine and shape, tenderise and marinate
- cooking a selection of recipes, e.g. water based methods, using the oven, set a mixture, select and adjust cooking times and temperatures, judge and manipulate sensory properties: seasoning, test for readiness
- presenting a selection of recipes, e.g. shaping and finishing a dough, glazing and food styling, preparing fruits and vegetables as a garnish

Learners must be able to:

- select appropriate preparation, cooking and serving techniques when producing dishes
- work safely: follow correct personal and food safety and hygiene practices and procedures
- work independently: make own judgements, e.g. cooking methods, cooking time, manipulating taste, texture and appearance
- use sensory descriptors appropriately and correctly

Developing recipes and meals

Learners must be able to develop recipes and meals to meet a specific nutritional need or lifestyle choice.

Learners must:

- consider the influence of lifestyle and consumer choice when adapting or developing meals and recipes, to include:
(i) adaptations to recipes to address current dietary advice
(ii) adaptations due to lifestyle patterns e.g. working parents needing dishes that are quick to prepare and cook
- consider nutritional needs and food choices when selecting recipes, including when making decisions about the ingredients, processes, cooking methods, and portion sizes e.g. vegetarian alternatives
- develop the ability to review and make improvements to recipes by amending them to include the most appropriate ingredients, processes cooking methods, and portion sizes, e.g. low calorie diets
- manage the time and cost of recipes effectively
- use their testing and sensory evaluation skills, adjusting where needed, to improve the recipe during the preparation and cooking process, e.g. adjusting seasoning
- explain, justify and present their ideas about their chosen recipes and cooking methods to others
- make decisions about which techniques are appropriate in order to achieve their intended outcome, e.g. steaming instead of boiling

Learners must be able to carry out the techniques (listed in Appendix A) safely and be able to combine them to produce appealing meals whilst evaluating the end results.

WHERE CAN I FIND RELIABLE INFORMATION TO REVISE?

1. Class notes and the revision resources you have already made for your end of topic tests.

2. Revision booklets completed in class.

3. Illuminate Publishing – "Eduqas Food Preparation and Nutrition" text book - (446 page, very detailed), on-line version is free to use through the following web site and log in details:

   Web address: www.illuminate.digital/eduqasfood
   Username: SCHRIS4
   Password: STUDENT4

4. CGP – "GCSE WJEC Eduqas Food Preparation & Nutrition Complete Revision & Practice Book" – available half price through school.

5. CGP – "GCSE Food Preparation & Nutrition for WJEC Eduqas (Grade 9-1) Revision Question Cards" - available half price through school.

6. Website which is excellent for the nutritional facts: www.foodafactoflife.org .

7. Seneca Learning, takes pupils through the theory topics and then tests them for free. You may already use it for science, but will need to add the Eduqas Food Preparation and Nutrition module at www.senecalearning.com

8. I will also be creating a shared area on synergy classwork where I will place all my help guides and revision materials too.