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**Knowledge Rich Curriculum Plan**

**Year 12 Food Science and Nutriton**



| **Lesson/Learning Sequence** | **Intended Knowledge:**  *Students will know that…* | **Tiered Vocabulary** | **Prior Knowledge:**  *In order to know this students, need to already know that…* | **Assessment** |
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| Lesson 1-4  T - Analyse Risks Associated with Food Safety  P - Investigate and Handle a Range of Pastry Types | * Students will know how individuals can take responsibility for food safety. * Students will know how the methods used by food handlers to keep themselves clean and hygienic are important to prevent food poisoning. * Students will know how the methods used to keep work areas clean and hygienic are important to prevent food poisoning. * Students will know how to analyse risks associated with food safety * P- Students will know how to produce and handle a range of pastry types, to include puff pastry and filo pastry. | Critical Control Point- A step at which control can be applied and is essential to prevent or eliminate a food safety hazard or reduce it to an acceptable level.  Cross Contamination- The process by which bacteria or other microorganisms are unintentionally transferred from one substance or object to another, with harmful effect.  Due Diligence- Being able to prove that your business has taken reasonable steps to prevent food safety breaches.  HACCP- Hazard Analysis Critical Control Points (HACCP) is an internationally recognized method of identifying and managing food safety related risk and, when central to an active food safety program, can provide your customers, the public, and regulatory agencies assurance that a food safety program is well managed.  Microbiological Contamination- Happens when a food has been contaminated by microorganisms, including bacteria, viruses, mould, fungi, and toxins.  Pathogenic bacteria- Foodborne illness (commonly known as food poisoning) is often caused by consuming food contaminated by bacteria and/or their toxins, parasites, viruses, chemicals, or other agents.  Scores on the Doors- A hygiene rating system used by local authorities to determine how food outlets store, handle and prepare the food they distribute to the public. | * Students need to already know how to prevent food poisoning during practical sessions- i.e. refrigerate produce, use colour coded boards etc. * Students need to already know the Food Department routines and expectations including; removing blazers, handwashing, tying hair back, putting an apron on, filling sinks with hot water/washing up liquid, storing bags appropriately and meeting their class teacher at the front of the room. * Students need to already know how to appropriately prepare themselves and the environment for a practical lesson using the acronym HATTIE. * Students need to already know how to turn on the oven. * Students need to already know how to weigh ingredients. * Students need to already know how to safely use a range of equipment. * Students need to already know to place their product in the oven/ use the hob. * Students need to already know to safely remove their product from the oven/ hob * Students need to already know how to wash up- using the departmental washing up procedures. | Recall, revisit and activate opportunities within the lesson.  Teacher visual assessment of practical skills.  Teacher/ LSA support where necessary. |
| Lesson 5-6  T - Understand Properties of Nutrients  P - Investigate and Handle a Range of Pastry Types | * Students will know how nutrients are structured * Students will know how to classify nutrients in foods * Students will know how to assess the impact of food production methods on nutritional value * P- Students will know how to produce and handle a range of pastry and dough types, to include pate sucree and an enriched sweet dough | Amino Acid- Organic compounds that contain a carboxyl (-COOH) and an amino (-NH2) group, and join together to form proteins.  Biological value- The nutritional effectiveness of the protein in a given food, expressed as the percentage used by the body of either the total protein consumed or the digestible protein available.  Dipeptide- A peptide that yields two amino acids on hydrolysis.  Disaccharide- Two monosaccharides joined together by a condensation reaction (sucrose, lactose and maltose are all disaccharides)  Fortification- A strengthening or improvement, as by addition of or intensification with another ingredient:  Glycaemic index- An index indicating the effects of various foods on blood sugar. Fast-releasing foods that raise blood sugar levels quickly are high on the index, while slow-releasing foods, at the bottom of the index, give a slow but sustained release of sugar Abbreviation: GI  High Biological Value- Biological value, or BV, measures the quality. When a protein has a high BV this means it contains a sufficient amount of amino acids to form all the proteins your body needs. Digestible Protein – Your body's ability to break food down and use it effectively is an aspect of how digestible it is.  Low Biological Value- The biological value relates to how many amino acids are present in a protein. If a food is missing one or more of the indispensable amino acids, it has a low biological value (LBV). For example, baked beans have an LBV.  Lipids- Substances that are insoluble in water but soluble in solvents, e.g. alcohol and ether. Lipids are referred to as when used in cooking.  Monosaccharide- One sugar molecule (glucose, galactose and fructose are all monosaccharides)  Non-starch polysaccharide- (NSP) Those polysaccharides (complex carbohydrates), other than starches, found in foods. They are the major part of dietary fibre and can be measured more precisely than total dietary fibre; they include cellulose, pectins, glucans, gums, mucilages, inulin, and chitin (and exclude lignin).  Nutrient density- Means how many nutrients you get from a food, given the number of calories it contains. Nutrient density is a simple way to connect nutrients with calories.  Polypeptide- Many amino acids joined together in long chains.  Polysaccharide- Large molecules (polymers) made almost entirely from glucose molecules joined together. Also called complex carbohydrates. (starch, dextrin, pectin, cellulose and glycogen are all polysaccharides) | * Students need to already know that a range of nutrients are required by the body to maintain a healthy diet. * Students need to already know the Food Department routines and expectations including; removing blazers, handwashing, tying hair back, putting an apron on, filling sinks with hot water/washing up liquid, storing bags appropriately and meeting their class teacher at the front of the room. * Students need to already know how to appropriately prepare themselves and the environment for a practical lesson using the acronym HATTIE. * Students need to already know how to turn on the oven. * Students need to already know how to weigh ingredients. * Students need to already know how to safely use a range of equipment. * Students need to already know to place their product in the oven/ use the hob. * Students need to already know to safely remove their product from the oven/ hob * Students need to already know how to wash up- using the departmental washing up procedures. | Recall, revisit and activate opportunities within the lesson.  Teacher visual assessment of practical skills.  Teacher/ LSA support where necessary. |
| Lesson 7-15  T - Understand the Relationship between Nutrients and the Human Body  P - Investigate and Handle a Range of Desserts/ Savoury Sauces/ Butchery of Chicken/Fish | * Students will know how to describe the functions of nutrients in the human body * Students will know how to explain characteristics of unsatisfactory nutritional intake * Students will know how to analyse nutritional needs of specific groups * Students will know how to assess how different situations affect nutritional needs * P- Students will know how to produce and handle a range of desserts, savoury sauces and meat/fish, to include; panna cotta, fruit decoration, chocolate decoration, set cheesecake, genoese sponge, bechamel sauce, hollandaise sauce, creme anglaise and the butchery of chicken and fish. | Ascorbic Acid- A vitamin found particularly in citrus fruits and green vegetables. It is essential in maintaining healthy connective tissue, and is also thought to act as an antioxidant. Severe deficiency causes scurvy.  Carotene- An orange or red plant pigment found in carrots and many other plant structures. It is a terpenoid hydrocarbon with several isomers, including beta-carotene.  Cholecalciferol- One of the D vitamins, a sterol essential for the deposition of calcium in bones and formed by the action of sunlight on dehydrocholesterol in the skin.  Cobalamin- Any of a group of cobalt-containing substances including cyanocobalamin (vitamin B12).  Folic Acid- A vitamin of the B complex found especially in leafy green vegetables, liver, and kidney.  Origin-  Lactose-Intolerance- A common digestive problem where the body is unable to digest lactose, a type of sugar mainly found in milk and dairy products.  Niacin- A nutrient in the vitamin B complex that the body needs in small amounts to function and stay healthy. Niacin helps some enzymes work properly and helps skin, nerves, and the digestive tract stay healthy. Niacin is found in many plant and animal products.  Pyridoxine- A colourless weakly basic solid present chiefly in cereals, liver oils, and yeast, and important in the metabolism of unsaturated fatty acids.  Rastafarian- a member of the Rastafarian religious movement. Rastafarians have distinctive codes of behaviour and dress, including the wearing of dreadlocks and the smoking of cannabis, and they follow a diet that excludes pork, shellfish, and milk.  Retinol- A yellow compound found in green and yellow vegetables, egg yolk, and fish-liver oil. It is essential for growth and for vision in dim light.  Riboflavin- A yellow vitamin of the B complex which is essential for metabolic energy production. It is present in many foods, especially milk, liver, eggs, and green vegetables, and is also synthesized by the intestinal flora. | * Students need to already know what some nutrients/minerals do in the human body. * Students need to already know the Food Department routines and expectations including; removing blazers, handwashing, tying hair back, putting an apron on, filling sinks with hot water/washing up liquid, storing bags appropriately and meeting their class teacher at the front of the room. * Students need to already know how to appropriately prepare themselves and the environment for a practical lesson using the acronym HATTIE. * Students need to already know how to turn on the oven. * Students need to already know how to weigh ingredients. * Students need to already know how to safely use a range of equipment. * Students need to already know to place their product in the oven/ use the hob. * Students need to already know to safely remove their product from the oven/ hob * Students need to already know how to wash up- using the departmental washing up procedures. | Recall, revisit and activate opportunities within the lesson.  Teacher visual assessment of practical skills.  Teacher/ LSA support where necessary. |
| Lesson 16-29  T - Unit 1 Internal Assessment  P - Practical Research into Internal Assessment Brief | * Students will know how to explain how individuals can take responsibility for food safety in relation to the case study. * Students will know how to explain with clear and detailed reason a range of methods that food handlers use to keep themselves clean and hygienic that are appropriate to the case study. * Students will know how explain with clear and detailed reasoning a range of methods used to keep work areas clean and hygienic appropriate to the case study. * Students will know how analyse a range of information to determine a range of risks to food safety which are appropriate to the case study * Students will know how to explain with clear and detailed reasoning how a range of appropriate nutrients are structured, making explicit links between the nutrients and the case study. * Students will know how to classify nutrients in foods making explicit links between the nutrients and the case study. * Students will know how to assess how an appropriate range of food production methods impact on nutritional value in relation to the case study. * Students will know how describe in detail the functions of an appropriate range of nutrients in the human body which is relevant to the specific groups in the case study. * Students will know how to explain with clear and detailed reasoning the characteristics of unsatisfactory nutritional intake, appropriate to the specific groups and information in the case study. * Students will know how to analyse a range of information to determine nutritional needs of specific groups which are appropriate to the case study. * Students will know how to assess how different situations affect nutritional needs of specific groups in the case study. * Students will know how to calculate nutritional requirements for given individuals * Students will know how to Interpret recipes for complex menus * Students will know how to plan the production of menus, incorporating well considered contingencies for most situations. * Students will know how to use tools in the preparation of commodities * Students will know how to use a range of appropriate advanced techniques with speed and precision. * Students will know how to assure quality of materials to be used in food preparation * Students will know how to use advanced techniques in cooking of commodities * Students will know how to present cooked complex dishes using advanced presentation techniques * Students will know how to use appropriate food safety * practices. * Students will know how to monitor food production and adapt the process where necessary. | Amino Acid- Organic compounds that contain a carboxyl (-COOH) and an amino (-NH2) group, and join together to form proteins.  Biological value- The nutritional effectiveness of the protein in a given food, expressed as the percentage used by the body of either the total protein consumed or the digestible protein available.  Dipeptide- A peptide that yields two amino acids on hydrolysis.  Disaccharide- Two monosaccharides joined together by a condensation reaction (sucrose, lactose and maltose are all disaccharides)  Fortification- A strengthening or improvement, as by addition of or intensification with another ingredient:  Glycaemic index- An index indicating the effects of various foods on blood sugar. Fast-releasing foods that raise blood sugar levels quickly are high on the index, while slow-releasing foods, at the bottom of the index, give a slow but sustained release of sugar Abbreviation: GI  High Biological Value- Biological value, or BV, measures the quality. When a protein has a high BV this means it contains a sufficient amount of amino acids to form all the proteins your body needs. Digestible Protein – Your body's ability to break food down and use it effectively is an aspect of how digestible it is.  Low Biological Value- The biological value relates to how many amino acids are present in a protein. If a food is missing one or more of the indispensable amino acids, it has a low biological value (LBV). For example, baked beans have an LBV.  Lipids- Substances that are insoluble in water but soluble in solvents, e.g. alcohol and ether. Lipids are referred to as when used in cooking.  Monosaccharide- One sugar molecule (glucose, galactose and fructose are all monosaccharides)  Non-starch polysaccharide- (NSP) Those polysaccharides (complex carbohydrates), other than starches, found in foods. They are the major part of dietary fibre and can be measured more precisely than total dietary fibre; they include cellulose, pectins, glucans, gums, mucilages, inulin, and chitin (and exclude lignin).  Nutrient density- Means how many nutrients you get from a food, given the number of calories it contains. Nutrient density is a simple way to connect nutrients with calories.  Polypeptide- Many amino acids joined together in long chains.  Polysaccharide- Large molecules (polymers) made almost entirely from glucose molecules joined together. Also called complex carbohydrates. (starch, dextrin, pectin, cellulose and glycogen are all polysaccharides) | * Students will already need to know the importance of food safety * Students will already need to know the properties of * nutrients * Students will already need to know the relationship between nutrients and the human body * Students need to already know the Food Department routines and expectations including; removing blazers, handwashing, tying hair back, putting an apron on, filling sinks with hot water/washing up liquid, storing bags appropriately and meeting their class teacher at the front of the room. * Students need to already know how to appropriately prepare themselves and the environment for a practical lesson using the acronym HATTIE. * Students need to already know how to turn on the oven. * Students need to already know how to weigh ingredients. * Students need to already know how to safely use a range of equipment. * Students need to already know to place their product in the oven/ use the hob. * Students need to already know to safely remove their product from the oven/ hob * Students need to already know how to wash up- using the departmental washing up procedures. | Recall, revisit and activate opportunities within the lesson.  Teacher visual assessment of practical skills.  Teacher/ LSA support where necessary. |
| Lesson 30-34  T - Unit 1 External Assessment Exam Practice | * Students will know how to correctly answer the examination questions using key command words. | Amino Acid- Organic compounds that contain a carboxyl (-COOH) and an amino (-NH2) group, and join together to form proteins.  Biological value- The nutritional effectiveness of the protein in a given food, expressed as the percentage used by the body of either the total protein consumed or the digestible protein available.  Dipeptide- A peptide that yields two amino acids on hydrolysis.  Disaccharide- Two monosaccharides joined together by a condensation reaction (sucrose, lactose and maltose are all disaccharides)  Fortification- A strengthening or improvement, as by addition of or intensification with another ingredient:  Glycaemic index- An index indicating the effects of various foods on blood sugar. Fast-releasing foods that raise blood sugar levels quickly are high on the index, while slow-releasing foods, at the bottom of the index, give a slow but sustained release of sugar Abbreviation: GI  High Biological Value- Biological value, or BV, measures the quality. When a protein has a high BV this means it contains a sufficient amount of amino acids to form all the proteins your body needs. Digestible Protein – Your body's ability to break food down and use it effectively is an aspect of how digestible it is.  Low Biological Value- The biological value relates to how many amino acids are present in a protein. If a food is missing one or more of the indispensable amino acids, it has a low biological value (LBV). For example, baked beans have an LBV.  Lipids- Substances that are insoluble in water but soluble in solvents, e.g. alcohol and ether. Lipids are referred to as when used in cooking.  Monosaccharide- One sugar molecule (glucose, galactose and fructose are all monosaccharides)  Non-starch polysaccharide- (NSP) Those polysaccharides (complex carbohydrates), other than starches, found in foods. They are the major part of dietary fibre and can be measured more precisely than total dietary fibre; they include cellulose, pectins, glucans, gums, mucilages, inulin, and chitin (and exclude lignin).  Nutrient density- Means how many nutrients you get from a food, given the number of calories it contains. Nutrient density is a simple way to connect nutrients with calories.  Polypeptide- Many amino acids joined together in long chains.  Polysaccharide- Large molecules (polymers) made almost entirely from glucose molecules joined together. Also called complex carbohydrates. (starch, dextrin, pectin, cellulose and glycogen are all polysaccharides) | * Students will already need to know the importance of food safety * Students will already need to know the properties of * nutrients * Students will already need to know the relationship between nutrients and the human body | Recall, revisit and activate opportunities within the lesson.  Teacher visual assessment of practical skills.  Teacher/ LSA support where necessary. |
| Practical Sessions (On-going) | * P- Students will know how to cook a range of predominantly savoury dishes in order to upskill themselves. | Ascorbic Acid- A vitamin found particularly in citrus fruits and green vegetables. It is essential in maintaining healthy connective tissue, and is also thought to act as an antioxidant. Severe deficiency causes scurvy.  Carotene- An orange or red plant pigment found in carrots and many other plant structures. It is a terpenoid hydrocarbon with several isomers, including beta-carotene.  Cholecalciferol- One of the D vitamins, a sterol essential for the deposition of calcium in bones and formed by the action of sunlight on dehydrocholesterol in the skin.  Cobalamin- Any of a group of cobalt-containing substances including cyanocobalamin (vitamin B12).  Folic Acid- A vitamin of the B complex found especially in leafy green vegetables, liver, and kidney.  Origin-  Lactose-Intolerance- A common digestive problem where the body is unable to digest lactose, a type of sugar mainly found in milk and dairy products.  Niacin- A nutrient in the vitamin B complex that the body needs in small amounts to function and stay healthy. Niacin helps some enzymes work properly and helps skin, nerves, and the digestive tract stay healthy. Niacin is found in many plant and animal products.  Pyridoxine- A colourless weakly basic solid present chiefly in cereals, liver oils, and yeast, and important in the metabolism of unsaturated fatty acids.  Rastafarian- a member of the Rastafarian religious movement. Rastafarians have distinctive codes of behaviour and dress, including the wearing of dreadlocks and the smoking of cannabis, and they follow a diet that excludes pork, shellfish, and milk.  Retinol- A yellow compound found in green and yellow vegetables, egg yolk, and fish-liver oil. It is essential for growth and for vision in dim light.  Riboflavin- A yellow vitamin of the B complex which is essential for metabolic energy production. It is present in many foods, especially milk, liver, eggs, and green vegetables, and is also synthesized by the intestinal flora. | * Students need to already know the Food Department routines and expectations including; removing blazers, handwashing, tying hair back, putting an apron on, filling sinks with hot water/washing up liquid, storing bags appropriately and meeting their class teacher at the front of the room. * Students need to already know how to appropriately prepare themselves and the environment for a practical lesson using the acronym HATTIE. * Students need to already know how to turn on the oven. * Students need to already know how to weigh ingredients. * Students need to already know how to safely use a range of equipment. * Students need to already know to place their product in the oven/ use the hob. * Students need to already know to safely remove their product from the oven/ hob * Students need to already know how to wash up- using the departmental washing up procedures. | Teacher visual assessment of practical skills.  Teacher/ LSA support where necessary. |