KS4 Curriculum Map – Food Preparation and Nutrition:

Topic	Knowledge *Substantive knowledge*: This is the specific, factual content for the topic, which should be connected into a careful sequence of learning.	Skills *Disciplinary knowledge*: This is the action taken within a particular topic in order to gain substantive knowledge.	Assessment Opportunities What assessments will be used to measure student progress?

Introduction to GCSE course	• Introduction and understanding of what is required on the course.
	• Knowledge and understanding about the skills required.
	  • Skill 1: General practical skills
	  • Skill 2: Knife skills
	  • Skill 3: Preparing fruit and vegetables
	  • Skill 4: Use of the cooker
	  • Skill 5: Use of equipment
	  • Skill 6: Cooking methods
	  • Skill 7: Prepare, combine and shape
	  • Skill 8: Sauce making
	  • Skill 9: Tenderise and marinate
	  • Skill 10: Dough
	  • Skill 11: Raising agents
	  • Skill 12: Setting mixtures
	• Knowledge and understanding about the content and topics
	• Knowledge and understanding about the exam and non-exam assessment requirements.
		Develop understanding through theory and practical work the following:
		
		• Develop understanding through theory and practical work the following:
		
		• **Paper 1 -** Written exam: 1 hour 45 minutes • 100 marks • 50% of GCSE
		
		• Task 1: Food investigation (30 marks) Students' understanding of the working characteristics, functional and chemical properties of ingredients. Practical investigations are a compulsory element of this NEA task.
		• Task 2: Food preparation assessment (70 marks) Students' knowledge, skills and understanding in relation to the planning, preparation, cooking, presentation of food and application of nutrition related to the chosen task. Students will prepare, cook and present a final menu of three dishes within a single period of no more than three hours, planning in advance how this will be achieved.
			• Theory
			• Questioning

Knife skills and Preparation and techniques Skills 1 - 12	• Knife skills. • Tenderise and marinate. • Flavour. • Handling high-risk foods correctly.	Develop understanding through theory and practical work the following: • Fruits and vegetables: bridge hold, claw grip, peel, slice, dice and cut into evenly sized pieces (i.e. batons, julienne). • 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: 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. • Preventing food poisoning (wash and dry, where appropriate).	• Practical • Demonstration • Theory • Testing/Quiz • Questioning • Researching • Practical
3.4 Food safety			
3.4.1.4 Bacterial contamination	• 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.	Develop understanding through theory and practical work the following • Contamination from: 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 • Pathogens: Campylobacter, E-coli, Salmonella, Listeria, Staphylococcus aureus.	• Practical • Demonstration • Theory • Testing/Quiz • Questioning • Researching • Practical

3.4.1.1 Microorganisms and enzymes	• 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 usually made from protein.	Develop understanding through theory and practical work the following: • 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. • Bread making (S4 and S10). • Water based methods using the hob – blanching of vegetables to demonstrate the destruction of enzymes in foods (S6). • Oxidation – eg preventing water soluble vitamin loss when preparing and cooking vegetables (S3, S6 and S2).	• Practical • Demonstration • Theory • Testing/Quiz • Questioning • Researching • Practical • Exam style questions and Activities
3.4.1.2 The signs of food spoilage	• Bacterial growth. • Mould growth and yeast production. • Preparing & storing foods • 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.	Develop understanding through theory and practical work the following: • The role of time, temperature, moisture and food availability. • The role of time, temperature, moisture and food availability. • Types of micro-organisms and key points • High-risk foods, critical temperatures. • Preparing fruit and vegetables – mash, shred, scoop, segment, juice and blanch fruits and vegetables to control enzymic browning (S3). • Preparing fruit and vegetables which sustain yeast and mould growth, wash and chill to prevent their growth. Demonstrate the following techniques: deseed, de-skin (for example, tomatoes).	• Theory • Testing/Quiz • Questioning • Researching • Activites • Practicals

3.4.1.3 Microorganisms in food production	• The use of microorganisms in food production. • Micro-organisms. • Making yogurt and cheese. • Moulds in the production of blue cheese • Yeasts to raise bread • Bacteria in yoghurt and cheese production.	Develop understanding through theory and practical work the following: • Conditions and control for bacterial growth: The role of time, temperature, moisture and food availability. • Growth conditions and control for mould growth and yeast production: The role of time, temperature, moisture and food availability. • Signs of food spoilage: Natural decay, enzyme action and yeast production. • Helpful properties of microorganisms in food production: Types of micro-organisms and key points. • Make a bread dough, finish and shape a bread dough for use in flat breads, pizza or calzone (S4 and S10).	• Theory • Testing/Quiz • Questioning • Researching • Practical demonstration • Worksheet • Practicals
3.4.2.1 Buying and storing food	• The food safety principles when buying and storing food. • To apply food safety considerations when preparing, storing and cooking.	Develop understanding through theory and practical work the following: • Buying food: Labelling and date marks. • Visual checks. • Reputable supplier. • Storing food. • Types of storage and how to store foods correctly Cooking and serving food. • High-risk foods, critical temperatures. • 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 freezers • Date marks: 'Best before' and 'use by' dates • Covering foods.	• Theory • Testing/Quiz • Questioning • Researching • Practical demonstration • Activities • Practicals • Exam style questions and Activities
3.4.2.2 Preparing, cooking and serving food	• The food safety principles when preparing, cooking and serving food. • Personal hygiene • Clean work surfaces • Separate raw and cooked foods and use of	Develop understanding through theory and practical work the following: • 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.	• Theory • Testing • Questioning • Researching

	separate utensils • Correct cooking times • Appropriate temperature control including: defrosting and reheating • Appropriate care with high risk foods • Correct use of food temperature probes.	• Using the grill: char, grill or toast. • Using the oven: baking, roasting, casseroles and/or tagines, braising. • Personal hygiene • Clean work surfaces • Separate raw and cooked foods and use of separate utensils • Correct cooking time • Appropriate temperature control including: defrosting and reheating • Appropriate care with high risk foods • Correct use of food temperature probes.	• Practical demonstration • Practicals • End of topic assessment
3.2 Food, Nutrition and Health			
3.2.3.1 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. • Food allergies and intolerances. • The dietary reference values (DRVs). • 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. • How to plan a balanced meal for specific dietary groups: vegetarian and vegan, coeliac, lactose intolerant and high fibre diets.	Develop understanding through theory and practical work the following: • Consideration of the nutritional needs and food choices when selecting recipes, including when making decisions about the ingredients, processes, cooking methods and portion sizes. • To plan, prepare, cook, modify, and create recipes to meet different dietary groups and life stages. • Maintaining a healthy body weight throughout life, using the current guidelines for a healthy diet eg eatwell guide. • Understanding nutritional needs for the following life stages: young children, teenagers, adults and the elderly. • Planning a balanced meal for specific dietary groups: vegetarian and vegan, coeliac, lactose intolerant and high fibre diets.	• Testing pupil's knowledge • through questioning • Key words • Practical lessons • Evaluation of lessons • Peer Assessment activities • Mini tests • Exam style questions and Activities

3.2.3.4 The relationship between diet and health	• A balanced diet. • The government's guidelines for a healthy diet. • Major diet-related health issues. • The relationship between diet, nutrition and health • The major diet related health risks. • How diet can affect health and how nutritional needs change in relation to: • Obesity • Cardiovascular health (coronary heart disease (CHD) and high blood pressure) • Bone health (rickets and osteoporosis) • Dental health • Iron deficiency anaemia • Type 2 diabetes.	Develop understanding through theory and practical work the following: • The importance of having a healthy diet. • The application of the eight tips for healthy eating. • 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. • Select and adjust cooking process to match the recipe and take account of dietary group eg grill meat rather than fry to reduce the fat content as a high saturated fat intake is a risk factor for CHD (S1).	• Testing pupil's knowledge through questioning • Key words • Practical lessons. • Evaluation of lessons • Peer Assessment activities • Mini tests
3.2.3.3 How to carry out nutritional analysis	• Modifying recipes and meals. • How to plan and modify recipes, meals and diets to reflect the nutritional guidelines for a healthy diet.	Develop understanding through theory and practical work the following: • Altering or substituting ingredients, changing the method of cooking or process and changing the portion size. • How to use current nutritional information and data eg food tables, nutritional analysis software to calculate energy and nutritional value. • Plan, make and modify dishes calculating energy and nutritional values.	• Practical lessons • Evaluation of Practical • Textbook activity • Self-Assessment • Peer- Assessment
3.2.3.2 Energy needs	• The relationship between food intake and physical activity. • Energy values. • Energy requirements. • 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).	Develop understanding through theory and practical work the following: • Basal metabolic rate (BMR) and physical activity level (PAL) and their importance in determining energy requirements. • Recommended percentage of daily energy intake. • Sources of energy: protein, fat, carbohydrate and alcohol. • Units (kcal and kj) for measuring energy • Gender, life stage, pregnancy/lactation, size/body weight, genetics, occupation and lifestyle.	• Textbook activity • PowerPoint • Experimental tasks • Investigation work • Practical • Exam style questions and Activities

		• Deficiency and excess. • General practical skills (S1).	
3.2.1.1 Protein (Macronutrient)	• The functions • Main sources • Effects of deficiency and excess • Related dietary reference values. • Low and high biological value proteins • Protein complementation • Protein alternatives eg textured vegetable protein (TVP), soya, mycoprotein and tofu	Develop understanding through theory and practical work the following: • Types and structure: High biological value (HBV) and low biological value (LBV). • Functions and deficiency. • Animal and vegetable. • Modify recipes for vegetarian diets. • Knife skills – meat, fish or their alternatives (S2). • How acids denature and coagulate protein (S9). • Make a bolognese sauce using meat or a meat alternative such as soya (S8).	• Practical and Testing • Theory work • Research and Investigation • Analysis and evaluation skills • Questioning
3.2.1.2 Fat (Macronutrient)	• Types and functions. • Saturated fats • Unsaturated fats (monounsaturated and polyunsaturated). • Main sources • Effects of deficiency and excess • Related dietary reference values	Develop understanding through theory and practical work the following: • Types and structure: fats and oils (saturated, unsaturated and polyunsaturated) • Functions and deficiency. • Make a pastry, shape and finish a pastry (S10). • Use food processor to make pastry (S5). • Adapt methods of cooking to reduce fat, eg grilling instead of frying, baking instead of roasting (S4).	• Practical and Testing • Theory work • Research and Investigation • Analysis and evaluation skills • Questioning
3.2.1.3 Carbohydrate (Macronutrient)	• Starch (polysaccharides) • Sugars (monosaccharides/ disaccharides) • Dietary fibre. • Main sources • Effects of deficiency and excess • Related dietary reference values	Develop understanding through theory and practical work the following: • Sugar, starch and fibre. Monosaccharides, disaccharides, starch: complex carbohydrates and fibre. • Use starch to set a mixture (S12). • Demonstrate proving to make bread rolls using high fibre flour (S10). • Modify a recipe to increase fibre.	• Practical • Theory • Evaluation • Reflection • Questioning throughout

3.2.2.1 Vitamins (Micronutrients)	• Vitamins A, B, C, D, E, K, • The functions • Main sources • Effects of deficiency and excess • Related dietary reference values. • 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). • How preparation and cooking affects the nutritional properties of food. • The role of antioxidants in protecting body cells from damage	Develop understanding through theory and practical work the following: • Fat soluble vitamins: A, D, E, K. • Water soluble vitamins: B1 (thiamine), B2 (riboflavin), B3 (niacin), B9 (Folate/Folic acid), B12 (cobalamin), C (ascorbic acid). • Functions and deficiency. • Knife skills – fillet and slice fish and/or fruits and vegetables (S2). • Cooking methods – water based using the hob – steaming, boiling, simmering and poaching (S6). • Knife skills – cut fruit and vegetables into even size pieces (ie batons, julienne) (S2). • Preparing fruit and vegetables eg making different salads inclusive of vegetables, nuts or eggs which contain antioxidant vitamins (S2/S3).	• Practical • Theory • Evaluation • Reflection • Questioning throughout • Exam style questions and Activities
3.2.2.2 Minerals (Micronutrients)	• Calcium, iron, sodium, fluoride, iodine, phosphorus. • The functions • Main sources • Effects of deficiency and excess • Related dietary reference values.	Develop understanding through theory and practical work the following: • Functions and deficiency. • Preparing vegetables, meats or alternatives which are high in iron (S2). • Preparing dairy foods, which are high in calcium, for example when making a white sauce (S8). • Reducing the salt in recipes eg when tasting and seasoning, replace salt with herbs and spices.	• Theory • Testing/Quiz • Questioning • Practical demonstration • Practicals • End of topic assessment
3.2.2.3 Water	• 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.	Develop understanding through theory and practical work the following: • Functions and deficiency. • Recommended guidelines for daily intake of water. • 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.	• Practical. • Demonstration • Theory • Testing/Quiz • Questioning • Activities • Practical
3.5 Food Choice			

3.5.1.1 Factors which influence food choice	• To know and understand factors which may influence food choice. • Personal, social and economic factors, medical reasons. • Organic foods. • Ethical and moral beliefs. • Time available to prepare/ cook. Students must be able to cost recipes and make modifications.	Develop understanding through theory and practical work the following: • Food choice can be affected by cost, enjoyment, preference, seasonality, availability, time of day, activity, celebration or occasion. • Consumer information, food labelling, marketing • Vegetarians (lacto-ovo, lacto, ovo and vegans), animal welfare, local produce, organic food. • The following factors in relation to food choice: Physical activity level (PAL), Celebration/occasion, Cost of food, Preferences, Enjoyment, Food availability, Healthy eating, Income, Lifestyles, Seasonality, Time of day • When selecting recipes students could explain and justify their reasons for choice. • When preparing recipes and meals consider lifestyle, consumer choice etc. • When planning recipes and dishes carry out costing of the dishes.	• Theory • Testing/Quiz • Questioning • Textbook activity • PowerPoint • Practicals • Demonstration • Exam style questions and Activities
3.5.1.2 Food choices	• Food choice related to religion, culture, ethical and moral beliefs and medical conditions • 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.	Develop understanding through theory and practical work the following: • When selecting some recipes students should explain and justify their reasons for choice. • Select, modify and make recipes for different religions, cultures and dietary groups.	• Practical • Demonstration • Theory • Testing/Quiz • Questioning • Activities • Practical

3.5.1.3 Food labelling and marketing influences	• How information about food available to the consumer, including labelling and marketing, influences food choice.	Develop understanding through theory and practical work the following: • Mandatory information included on food packaging in accordance with current European Union and Food Standards Agency (FSA) legislation • 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.	• Theory • Testing/Quiz • Questioning • Textbook activity • PowerPoint • Practicals • Demonstration
3.5.2 British and international cuisines	• 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.	Develop understanding through theory and practical work the following: • 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. • Students should have the opportunity to prepare and cook recipes from a range of countries and cuisines, using different equipment and cooking methods. • Skills demonstrated will be relevant to the task selected and demonstrate food preparation and cooking skills across groups (S1 to S12).	• Theory • Testing/Quiz • Questioning • Textbook activity • Practicals • Demonstration
3.5.3 Sensory evaluation	• Sensory testing methods • How taste receptors and olfactory systems work when tasting food. • Importance of senses when making food choices: sight, taste, touch and aroma • Preference tests: paired preference, hedonic. • Discrimination tests: triangle. • Grading tests: ranking, rating and profiling • How to set up a taste panel • Controlled conditions required for sensory testing	Develop understanding through theory and practical work the following: • General practical skills – judge and manipulate sensory properties. How to taste and season during the cooking process. Change the taste and aroma through the use of infusions, herbs and spices, paste, jus and reduction (S1). • Test sensory qualities of a wide range of foods. • Evaluate and apply the results of sensory testing. • Importance of senses when making food choices: sight, taste, touch and aroma	• Theory • Testing/Quiz • Questioning • Practical demonstration • Practicals • End of topic assessment

	• 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.	• Understanding tasting and sensory charts	
3.6 Food Provenance			
3.6.1.1 Food Sources	• Where and how ingredients are grown, reared and caught. • Grown ingredients: fruits, vegetables and cereals reared ingredients: meat and poultry caught ingredients: fish an understanding of: Organic and conventional farming, Free range production, Intensive farming, Sustainable fishing • Advantages and disadvantages of local produced foods, seasonal foods and genetically modified (gm) foods.	Develop understanding through theory and practical work the following: • 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. • Where and how they are reared: intensive farming methods, free-range. • Products, rearing of the animals. • Classification of meat, poultry and game.	• Testing • Practical • Demonstration • Textbook • Evaluation • Theory work • Reflection
3.6.1.2 Food and the environment	• Environmental issues associated with food. • 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.	Develop understanding through theory and practical work the following: • Consider the seasons when selecting ingredients for recipes using fruits and vegetables (S2 and S3). • Using left over food to avoid wastage, whilst considering food waste.	• Theory • Testing/Quiz • Questioning • Textbook activity • PowerPoint • Practicals • Demonstration
3.6.1.3 Sustainability of food	• Food security on society, local and global markets and the environment. • Students must have an awareness of: climate change • Global warming • Sustainability of food sources • Insufficient land for growing food • Availability of food • Fairtrade	Develop understanding through theory and practical work the following: • The impact of food and food security on local and global markets and communities. • The challenges to provide the world's growing population with a sustainable, secure, supply of safe, nutritious and affordable high-quality food. • The availability of food, the access to food, The individual's ability to utilise food.	• Theory • Testing/Quiz • Questioning • Textbook activity • PowerPoint • Practicals • Demonstration • Exam style questions

	• Problems of drought and flooding • Genetically modified (gm) foods • Food waste.	• 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.	and Activities
3.6.2.1 Food production	• Primary and secondary stages of processing and production. • 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 microfiltered 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.	Develop understanding through theory and practical work the following: • How wheat is milled and processed to produce flour. • Heat treatment of milk. • 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 • 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. • Make dough for pasta, shape and finish dough using a pasta machine, shape and finish pasta (S5 and S10). • Water based cooking methods using the hob to boil the pasta (S6).	• Investigation work • Independent learning • Experiment • Practical • Evaluation • Peer Assessment

3.6.2.2 Technological developments associated with better health and food production	• Technological developments to support better health and food production including fortification and modified foods with health benefits and the efficacy of these. • Technological developments to support better health and food production including fortification and modified foods with health benefits and the efficacy of these. Fortification. • Use of additives. • New and emerging foods.	Develop understanding through theory and practical work the following: • The advantages and disadvantages of fortification. • Preservatives, colourings, flavourings and sweeteners, emulsifiers and stabilisers and thickeners, antioxidants. • 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 low fat spreads • 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. • To examine, carry out sensory analysis and evaluate existing products that have been modified and fortified.	• Theory • Testing/Quiz • Questioning • Practical demonstration • Practicals • End of topic assessment • Exam style questions and Activities
PPE 1	• Exam opportunity - Paper 1 practice	Focused revision session. Provide learners with focused and supported revision that allows them to review their collated and developed revision materials, and to use these to prepare for a practice test.	• Complete mock examination paper • Analysis of results
3.3 Food Science			
3.3.1.1 Why food is cooked and how heat is transferred to food	• The reasons why food is cooked • The different methods of heat transfer. • Food is cooked to: make food safe to eat, Develop flavours, Improve texture, Improve shelf life, Give variety in the diet. • How heat is transferred to food through: Conduction, Convection, Radiation	Develop understanding through theory and practical work the following: • How preparation and cooking affect the appearance, colour, flavour, texture, smell and overall palatability of food. • For sauce making: How conduction and convection work to cook a sauce and the need for agitation (S6) • How radiation works using the grill for a range of foods such as vegetables, meat, fish or alternatives such as halloumi, seeds and nuts, to char, toast and grill (S4).	• Practical • Demonstration • Theory • Testing/Quiz • Reflective Questioning • Activities • Practical

3.3.1.2 Selecting appropriate cooking methods	• Selection of appropriate preparation, cooking methods and times to achieve desired characteristics. • How the selection of appropriate preparation and cooking methods can conserve or modify nutritive value or improve palatability: • Water based: steaming, boiling, simmering, blanching, poaching, braising • Dry methods: baking, roasting, grilling, dry frying • 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.	Develop understanding through theory and practical work the following: • Using the oven for baking, roasting, braising, casseroles and/or tagines (S4). • Dry heat and fat based methods using the hob; dry frying, shallow frying and stir frying (S6). • Use of the microwave oven (S5). • Water, dry heat and fat based cooking methods using the hob – to conserve nutritive value eg steaming, stir frying (S6). • General practical skills – judge and modify sensory properties – awareness of the effect of preparation and cooking on the sensory characteristics of food – appearance, colour, flavour, texture, taste and season adding herbs, spices etc. Improve aesthetic qualities of foods by garnishing and decorating (S1). • The use of marinades to tenderise and flavour meats and alternatives (S9). • The boiling of vegetables to alter texture (S6).	• Practical • Demonstration • Theory • Testing/Quiz • Questioning • Activities • Practical • Textbook
3.3.2.1 Proteins	• The scientific principles underlying these processes when preparing and cooking food • The working characteristics, functional and chemical properties of proteins. • Protein denaturation • Protein coagulation • Gluten formation • Foam formation.	Develop understanding through theory and practical work the following: • Demonstrate how acids denature protein and marinades add flavour and moisture when preparing vegetables, meat, fish and alternatives (S9). • Setting of egg mixtures eg in quiche (S12). • Gluten formation – pasta making using a pasta machine, bread making (S5 and S10). • The use of marinades to tenderise and flavour meats and alternatives (S9). • Whisking eggs to produce a gas-in-liquid foam.	• Practical • Demonstration • Theory • Testing/Quiz • Questioning • Activities • Practical
3.3.2.2 Carbohydrates	• The scientific principles underlying these processes when preparing and cooking food • The working characteristics, functional and chemical properties of carbohydrates. • Gelatinization • Dextrinisation • Caramelisation.	Develop understanding through theory and practical work the following: • Make a blended white sauce showing starch gelatinisation such as either a roux or all-in-one blended sauce, infused sauce, velouté or béchamel to demonstrate how liquid/starch ratios affect viscosity (S8). • Demonstrate how conduction and convection work to	• Practical • Demonstration • Theory • Testing/Quiz • Questioning • Activities

		cook the sauce and the need for agitation. • Caramelisation of vegetables (S6). • Dextrinisation eg browning of bread when baking (S4).	• Textbook • Practical
3.3.2.3 Fats and oils	• The scientific principles underlying these processes when preparing and cooking food • The working characteristics, functional and chemical properties of fats and oils. • Shortening • Aeration • Plasticity • Emulsification.	Develop understanding through theory and practical work the following: • Use of fats/oils to demonstrate these processes. • Shortening and plasticity, eg pastry making (S10). • Aeration eg using the creaming method with a food mixer for a cake (S1, S4, S5 and S11). • Make an emulsion sauce such as a salad dressing, mayonnaise or hollandaise (S8).	• Practical • Demonstration • Theory • Testing/Quiz • Experiments • Questioning • Activities • Practical
3.3.2.4 Fruit and Vegetables	• The scientific principles underlying these processes when preparing and cooking food. • Enzymic browning • Oxidation.	Develop understanding through theory and practical work the following: • When preparing fresh fruits such as apples and pears, preventing enzymic browning by using lemon juice (S2) and (S3). • Oxidation eg preventing water soluble vitamin loss when preparing and cooking vegetables (S3) and (S6).	• Practical • Demonstration • Theory • Testing/Quiz • Questioning • Activities • Practical
3.3.2.5 Raising agents	• The scientific principles underlying these processes when preparing and cooking food • The working characteristics, functional and chemical properties of raising agents. • Chemical (baking powder, bicarbonate of soda, self-raising 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).	Develop understanding through theory and practical work the following: • Using chemical raising agents such as self-raising flour and baking powder (S11). • Use steam in a mixture to raise choux pastry or batter. • Use egg as a raising agent to: create a gas-in-liquid foam • Whisk egg whites • Whisking savoury roulade. • Yeast in bread making.	• Theory • Testing/Quiz • Questioning • Practical demonstration • Practicals • End of topic assessment

Recap and revision	Recap over the following topic areas in preparation for the NEA assessments and mock exams. 1. Food, nutrition and health 2. Food science 3. Food safety 4. Food choice 5. Food provenance.	Develop understanding through theory and practical work the following: • Create revision notes, postcards, and mind maps. • Revisit topics and flag up any areas of understanding that need revisiting. • Use exemplar questioning to help students to form exam answers.	• Theory • Testing/Quiz • Reflective Questioning • Exam style questions and Activities
Non Exam Assessment - NEA 1			
NEA 1 - Scientific investigation Task	• **I**ntroduction • Plan • Research (6 marks) • Learners will show: aim for the investigation. • Investigations and results (15 marks). • Analysis and evaluations (9 marks)	Task 1: Food investigation (30 marks) Students' understanding of the working characteristics, functional and chemical properties of ingredients. Practical investigations are a compulsory element of this NEA task. • What is the task and how am I planning to complete this? • Relevant research gathered, presented and summarised in the report. • Choice of investigations with detailed explanations linking to the functional and chemical properties of the ingredients. • Scientific investigation into all of the functional and chemical properties of ingredients for the task. • Completed records of observations and findings (this may include charts, graphs, photos and written descriptions). • Produce a comprehensive analysis with a wide range of opinions and viewpoints.	• Work on NEA • Deadlines set for each section • Feedback is generic to meet OFQUAL regulations
PPE 1	• Exam opportunity – Paper 1 practice	Focused revision session. Provide learners with focused and supported revision that allows them to review their collated and developed revision materials, and to use these to prepare for a practice test.	• Complete mock examination paper • Analysis of results

Non Exam Assessment - NEA 2			
NEA 2 – Food Preparation Task	• **I**ntroduction • Section A: Research the task (6 marks) • Section B: Demonstrating technical skills (18 marks) • Section C: Planning for the final menu (8 marks) • Section D: Making the final dishes (30 marks) • Section E: Analyse and evaluate (8 marks)	Task 2: Food preparation assessment (70 marks) Students' knowledge, skills and understanding in relation to the planning, preparation, cooking, presentation of food and application of nutrition related to the chosen task. Students will prepare, cook and present a final menu of three dishes within a single period of no more than three hours, planning in advance how this will be achieved. • What is the task and how am I planning to complete this? • Relevant research gathered, presented and summarized • Ideas gathered and developed • Reasons for selection choice of dishes relating to the task. • Identification of skills and techniques.	• Work on NEA • Deadlines set for each section • Feedback is generic to meet OFQUAL regulations
PPE 2	• Exam opportunity – Paper 1 practice	Focused revision session. Provide learners with focused and supported revision that allows them to review their collated and developed revision materials, and to use these to prepare for a practice test.	• Complete mock examination paper • Analysis of results
NEA 2 – Food Preparation Task	• **I**ntroduction • Section A: Research the task (6 marks) • Section B: Demonstrating technical skills (18 marks) • Section C: Planning for the final menu (8 marks) • Section D: Making the final dishes (30 marks) • Section E: Analyse and evaluate (8 marks)	• Practice skills through making products. • Evaluation of outcomes including tasting charts, graphs, photos and written descriptions, ingredients, skills). • Sensory/nutritional choice Costs. • Final dishes chosen, evaluated for choice. • Time plan. • Prepare, cook and present 3 dishes based on theme. • Analysis and evaluation: evidence of sensory testing. • Justification of choice Improvements/modifications.	• Work on NEA • Deadlines set for each section • Feedback is generic to meet OFQUAL regulations

Examination preparation	Recap over the following topic areas in preparation for the NEA assessments and mock exams. 1. Food, nutrition and health 2. Food science 3. Food safety 4. Food choice 5. Food provenance. • Section A responses. • Section B responses.	Develop understanding through theory and practical work the following: • Create revision notes, postcards, and mind maps. • Revisit topics and flag up any areas of understanding that need revisiting. • Use exemplar questioning to help students to form exam answers. • How to answer questions in depth. • Using the MARK scheme for past papers.	• Mock paper • Example answers • Previous test papers