

GCSE Food and Nutrition Eduqas (part of WJEC)

Year 10 Spring Term (1)

(Module 3)

Commodity: Cereals (including flours, breakfast cereals, bread and pasta)

KEY POINTS TO COVER PER COMMODITY

Provenance	<p>How climate, soil, etc., affects the types of cereals which can grow</p> <p>GM crops – discuss</p> <p>Cereal – as a staple food; impact of crop failure on health of a nation (link to sustainability and world health)</p>
How commodity is grown/reared and processed	<p>Look at how cereals are grown, harvested and processed</p> <p>General structure of grain – endosperm, germ and bran</p> <p>Suggest focusing on wheat and rice as there are many resources available online</p> <p>Milling of wheat into flour – key processing stages</p> <p>Secondary processing:</p> <p>Breakfast cereals – use different grains and look at sugar and salt content (link in food labelling on packaging – look at breakfast cereal packaging to compare cereal types and nutrients – how healthy are the cereals? Also, link in function of packaging and environmental impact, and marketing of breakfast cereals – who are these cereals aimed at?)</p> <p>Wheat into bread types, pasta</p> <p>Key stages in the bread making process</p> <p>Key stages in the pasta making process</p>
Classification	<p>Look at the range of cereals grown and eaten across the world</p> <p>Link secondary processing to selected cereals:</p> <p>Wheat – wholemeal, white, self-raising, semolina, etc.</p> <p>Rice – brown, white, basmati, Arborio, rice flour, rice vinegar, etc.</p> <p>Oats – rolled, oatmeal, etc.</p> <p>Discuss gluten-free flour</p>
Nutritional values (include sources, functions, deficiencies, excess, daily requirements)	<p>Cereals are a staple food (primary source of carbohydrate)</p> <p>Energy requirements (link to different groups)</p> <p>Balance of energy input with energy output</p> <p>Nutrient requirements (link to different life stages)</p> <p>Carbohydrate – starch</p> <p>Dietary fibre (NSP: non-starch polysaccharide) – soluble and insoluble</p> <p>B vitamins</p> <p>Effect of nutrient absorption due to presence of phytates</p> <p>Principal of fortification of food in the context of flour and breakfast cereals</p> <p>Water soluble vitamin B group – effect of cooking</p>
Dietary considerations	<p>Importance of wholegrains to reduce risk of heart disease, type 2 diabetes and control blood cholesterol</p>

	<p>Link to effect of low-fibre diet: Haemorrhoids, diverticulitis, cancer of the colon</p> <p>Deficiencies: Beriberi – lack of thiamin (vitamin B1) Pellagra – lack of niacin (vitamin B3)</p> <p>Allergies: Coeliac disease</p>
Food science	<p>Chemical and physical structure of cereal grains Gluten formation, gelatinisation, coagulation, dextrinisation, retrogradation Gels Breadmaking: <ul style="list-style-type: none"> • Scientific principles, including problem solving • Chorleywood process in breadmaking • Vitamin C (ascorbic acid) in large scale bread manufacturing Yeast as a raising agent Recap on types of raising agents and discuss their principles</p>
NEA Assessment 1 practise investigation	<p>Suggested investigations could include:</p> <ul style="list-style-type: none"> • Investigate the best flour for breadmaking (suggest gluten ball experiment, or making small batches of rolls using different flours and then conduct sensory testing) • Conduct an experiment to show the gelatinisation of a range of starches. What happens when these starches are frozen and then defrosted? • Conduct an experiment to find out the effect of other ingredients on the thickness of starch • What happens when you apply dry heat to starch?
Food hygiene and safety	<p>Concept of low risk foods (exception includes cooked rice) Food spoilage – mould, etc. Food safety issues with cooked rice</p>

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	Theory	Practical
Week 1	<p>Introduce/recap on concept of provenance, and how this commodity is grown and processed Milling of wheat into flour and classifications</p>	Basic bread rolls/focaccia bread
Week 2	<p>Continue with how this commodity is grown, and also include processing Include storage and food hygiene and safety Rice milling and classification Other cereals</p>	Risotto
Week 3	<p>Nutritional values (include sources, functions, deficiencies, excess, daily requirements) Dietary considerations – specifically to cereals</p>	Vegetable samosa (making samosa pastry from scratch)

Week 4	Food science lesson Cover the concepts listed above under Food science	Spinach and ricotta ravioli (making fresh pasta)
Week 5 NEA Assessment 1 focus and practise	Continue with food science Introduce a written brief, conduct an experiment Note: as the terms progress, build in more written work so that by the end of Year 10 learners will understand the expectations of the Year 11 NEA Assessment 1 (research methods, hypothesis setting, plan of action, writing up an experiment, analysis results of experiment and drawing conclusions, referencing sources)	Write up experiment
Week 6 General nutrition and diet theory, and a linked practical	Plan a dish suitable for one group listed above under Dietary considerations (e.g. high-fibre, gluten-free (coeliacs), suitable for diabetics, etc.) Use a nutritional analysis program to calculate nutrients and analyse data, cost dish Note: as the terms progress, build in more written work so that by the end of Year 10 learners will understand the expectations of the Year 11 NEA Assessment 2	Dish selected by learner (under teacher guidance)

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These dishes are examples. It is suggested that you use your own tried and tested recipes	Skills Page 23-25 in spec	Country
Savoury ideas Quiche	1, 5, 6, 7, 10, 12, 15, 17, 18, 19, 20	France/UK
Scones	3, 5, 6, 7, 12, 16, 17, 18, 19, 20	UK
Basic wholemeal bread/onion and olive focaccia	5, 6, 7, 8, 12, 16, 17, 18, 19, 20	UK/Italy
Vegetable samosas (making samosa pastry from scratch)	1, 2, 3, 5, 6, 12, 17, 19, 20	India
Chicken and bacon pie	1, 2, 3, 5, 6, 7, 9, 10, 12, 13, 17, 18, 19, 20	uk
Cheese straws	3, 5, 6, 7, 12, 17, 20	UK
Onion rings/tempura battered vegetables	1, 2, 5, 6, 8, 10, 16, 17, 19, 20	Generic – can apply to several countries
Pizza (bread base)	1, 2, 3, 5, 6, 7, 8, 9, 12, 13, 16, 17, 18, 19, 20	Italy

Lasagne	1, 2, 3, 5, 6, 8, 9, 10, 12, 13, 17, 18, 19, 20	Italy
Sweet potato and goats cheese ravioli	2, 5, 6, 8, 9, 17, 18, 19, 20	Italy
Spinach and ricotta ravioli	2, 5, 6, 8, 9, 17, 18, 19, 20	Italy
Sushi	1, 2, 5, 6, 9, 20	Japan
Risotto	1, 2, 5, 6, 9, 19, 20	Italy
Rice pudding	5, 6, 2, 19, 20	UK
Egg fried rice	1, 2, 5, 6, 9, 10, 19, 20	China
Vietnamese rolls	1, 2, 3, 19, 20	Vietnam
Sweet Ideas		
Lemon meringue pie	1, 2, 5, 6, 7, 8, 9, 12, 13, 17, 18, 19, 20	UK
Profiteroles/éclairs (choux pastry)	5, 6, 7, 8, 9, 12, 15, 16, 17, 18, 19, 20	France
Pasties (rough puff or shortcrust pastry)	1, 2, 3, 5, 6, 7, 8, 12, 17, 18, 19, 20	UK
Victoria sandwich (decorated with glacé icing, butter icing or whipped cream)	1, 2, 5, 6, 7, 8, 12, 15, 16, 19, 20	UK
Swiss roll	1, 2, 3, 5, 6, 7, 8, 12, 15, 16, 19, 20	UK
Chocolate brownies	5, 6, 7, 9, 12, 16, 19, 20	USA
Bakewell tart	3, 5, 6, 7, 8, 12, 16, 17, 18, 19, 20	UK
Fresh fruit tarts (with crème pâtissière)	1, 2, 5, 6, 7, 8, 9, 12, 13, 17, 18, 19, 20	France
Hot cross buns/Chelsea buns/brioche	5, 6, 7, 8, 12, 16, 17, 18, 19, 20	UK/France
Sable biscuits/shortbread fingers	5, 6, 7, 8, 12, 17, 18, 19, 20	France and UK
Butternut plum pancakes	1, 2, 5, 6, 9, 16, 19,20	UK/USA

Fruit crumble	1, 2, 5, 6, 12, 19, 20	UK
Practicals (NEA Assessment 2) – emphasise importance of time management, dovetailing, writing detailed time plans		