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Food teaching in secondary schools: A framework of knowledge and skills



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Introduction

This framework is a guide to the knowledge and skills expected of secondary school food teachers. It outlines the knowledge and skills that would be developed over time – resulting in exemplary food teaching.

The aim is to help secondary schools implement the requirements for food within the new National Curriculum for Design and Technology (D&T) in England, the GCSE Food Preparation and Nutrition and the Core Competences for Children and Young People aged 5 to 16 years. These curriculum measures, together with the other action points of the School Food Plan, seek to promote a 'pro-food' ethos in schools and heighten awareness of the integral part that food and a whole school approach plays in children's health, well-being and attainment. School food provision and how children keep themselves healthy will be monitored by the Office for Standards in Education, Children's Services and Skills (Ofsted) from September 2015 as part of the new Common Inspection Framework.

The framework can be used to:

- review and plan courses for trainee teachers, and set out expectations for qualified teacher status
- audit current practice by existing teachers, supporting performance related development
- support professional reviews with colleagues
- plan and run professional training courses to support best practice

The framework:

- sets standards, expectations and requirements for qualified teachers teaching food in secondary schools
- highlights key areas for development, presented in a manageable, easy to convey way with clear expectations
- provides aspirational goals which will be developed over time (describing accomplished food teaching)
- stipulates distinctive descriptions of food teaching, rather than generic teaching standards (which they may be used alongside)

The framework is presented in nine sections:

1. Developing professional competence
2. Taking a whole school approach
3. Teaching the curriculum
4. Managing practical food classes

5. Teaching food preparation and cooking
6. Designing, making and evaluating food
7. Promoting and applying nutrition
8. Applying aspects of consumer awareness
9. Implementing good food safety and hygiene

The stem for each section starts with '*When teaching, accomplished teachers ...*'. The term '*accomplished*' is used to describe a highly trained or skilled professional in a particular activity.

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Public Health England (PHE), along with the British Nutrition Foundation (BNF), initiated the development of this framework in response to a meeting comprising the BNF, the Food Teachers Centre, Ofsted, Department for Education and the School Food Plan to discuss the management and provision of food teaching. All participants felt that guidelines would be of benefit to teachers delivering food teaching in schools.

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1. Developing professional competence

When teaching, accomplished teachers:

1.1 Ensure that they meet national standards for the subject, such as Accreditation in Secondary Food Health and Safety Standards (which includes Level 2 Food Safety as one of 14 standards);

1.2 Develop an action plan for professional development (based on a needs analysis audit) (see Appendix 1);

1.3 Further their professional expertise by selecting appropriate professional development activities, such as shadowing, school visits, practical training in food skills or updating their subject knowledge (through face-to-face events and online training)

2. Taking a whole school approach

When teaching, accomplished teachers:

2.1 Use their expertise to support the whole school approach to food education and the provision and development of policies, understanding and promoting the position of food education in the health and wellbeing agenda of the whole school;

2.2 Contribute to whole school planning for food education. Work collaboratively with colleagues to enhance learning opportunities, secure consistency of key concepts and healthy eating messages across all subjects (such as using the UK healthy eating model) and coherence (by sequencing when key concepts are taught across subjects, eg science, PSHE and physical education);

2.3 Use their food lessons to motivate change in behaviour, such as to influence uptake of school lunch choices by allowing pupils to use food lessons to develop school lunch recipes in collaboration with the catering staff.

3. Teaching the curriculum

When teaching, accomplished teachers:

3.1 Develop schemes of work that take into account current educational thinking, best practice, national policies and statutory requirements, for example, national curriculum programme of study, advice from professional associations (such as the Design and

Technology Association), School Food Plan, Ofsted guidance, Public Health England, current healthy eating advice, food safety advice and examination specifications;

3.2 Set out a rationale for the scheme of work, including the aims, focus for each school year group, the anticipated starting point and differentiated learning outcomes for pupils, the key skills and knowledge that will be taught and the reason that these have been chosen. Review expectations against a nationally published progression framework or similar;

3.3 Ensure that the range of food, ingredients and recipes studied come from the major food groups and reflect the recommended guidelines for a healthy diet;

3.4 Communicate the aims and content of the scheme of work to a range of audiences, including parents/carers, other teachers and the pupils. Specify the key learning for each activity in terms of skills and knowledge rather than recipe or project;

3.5 Prepare stimulating resources that support effective learning;

3.6 Articulate and justify the resources that will be required to teach the curriculum effectively, safely and inclusively, such as budget for ingredients, equipment, technician and other learning support;

3.7 Develop an effective support network to provide a rich learning experience for learners, such as local food businesses, local chefs and food experts.

4. Managing practical food classes

When teaching, accomplished teachers:

4.1 Use effective classroom systems for managing health and safety (such as cleaning and storage of ingredients and cooked dishes, allergens), resourcing practical work (such as shopping) and maintenance of equipment. Contribute to risk assessments;

4.2 Act as role models of good practice for food storage, handling, preparing, cooking and serving food and drinks, including the safe use of equipment;

4.3 Brief all those that work alongside them in the food classroom in the necessary systems and processes, and ensure that these are followed;

4.4 Select and demonstrate appropriate teaching strategies during different stages of a practical lesson, such as spot demonstrations, individual support, group discussion review and tasting;

4.5 Use effective systems for the safe use of high, medium and low risk ingredients and equipment in the classroom, considering the management of the size of the group activity, positioning and number of equipment, supervision level required, appropriate selection of ingredients and equipment for ability;

4.6 Manage a complex range of simultaneous activities within time constraints of lessons, ensuring safe and successful dishes for all pupils, and differentiation and individual progress;

4.7 Use effective systems for getting pupils ready to cook, increasing their independence and decision-making skills;

4.8 Allow pupils choice and personalisation of cooking activities, encouraging independence and decision-making skills;

4.9 Organise safe and successful sensory evaluation processes and sessions;

4.10 Manage support staff (technician and/or teaching assistants) effectively.

5. Teaching food preparation and cooking (equipment, ingredients, food sources, functional characteristics, processes and skills)

When teaching food, accomplished teachers understand how children learn key concepts and skills, and use age/ability appropriate teaching strategies that engage learners, challenge a range of abilities, and build confidence and independence.

When teaching, accomplished teachers:

5.1 Demonstrate a high level of competence in a wide range of food skills for effective learning (see Appendix 2);

5.2 Explain how and why food is cooked and the functional properties of ingredients, to build up scientific understanding that underpins key food preparation and cooking processes (see Appendix 3);

5.3 Select and use an appropriate range of small hand and electrical equipment, safely and efficiently;

- 5.4** Choose ingredients, taking into account their nutritional, functional and sensory properties, in addition to other factors (such as cost, seasonality, sustainability);
- 5.5** Apply skills and understanding to plan, prepare and cook dishes/menus safely and hygienically for a healthy, varied diet;
- 5.6** Review and make improvements to recipes to meet specific needs/requirements (such as ingredient, food skill, cooking method and portion size changes);
- 5.7** Broaden food experiences, such as trying new ingredients and dishes.

6. Designing, making and evaluating food*

When teaching food, accomplished teachers understand how children learn key concepts and skills, and use age/ability appropriate teaching strategies that engage learners, challenge a range of abilities, and build confidence and independence.

When teaching, accomplished teachers:

- 6.1** Exploit appropriate research strategies for food, including those from industrial practice, for example the study of different cultures, lifestyle and dietary analysis to understand consumer needs;
- 6.2** Use a range of appropriate creative and innovative strategies to develop original menus, dishes and recipes;
- 6.3** Select from and use a wider, more complex range of ingredients, taking into account their functional properties;
- 6.4** Analyse the work of past and present food professionals to develop and broaden their understanding and experience of cooking and nutrition;
- 6.5** Taste, evaluate and refine their ideas and dishes against specified needs, taking into account the views and requirements of the intended consumer (including sensory and dietary analysis).

**As part of D&T (Cooking and nutrition) work at Key Stage 3*

7. Promoting and applying nutrition

When teaching food, accomplished teachers understand how children learn key concepts and skills, and use age/ability appropriate teaching strategies that engage learners, challenge a range of abilities, and build confidence and independence.

When teaching, accomplished teachers:

7.1 Apply current healthy eating advice, and understanding of people's needs, to develop diets for different individuals;

7.2 Define and demonstrate how to apply the principles of nutrition; that food and drinks provide energy and nutrients in different amounts; that they have important functions in the body; and that people require different amounts during their life and the implications of dietary excess or deficiency;

7.3 Discuss the importance of energy balance and how to maintain a healthy weight throughout life;

7.4 Demonstrate how to analyse a diet and make improvements;

7.5 Perform nutritional analysis and use the results to plan recipes, meals and diets;

7.6 Promote the benefits of a healthy diet and active lifestyle throughout their teaching.

8. Applying aspects of consumer awareness (food origin, food choice, food labelling)

When teaching food, accomplished teachers understand how children learn key concepts and skills, and use age/ability appropriate teaching strategies that engage pupils, challenge a range of abilities, and build confidence and independence.

When teaching, accomplished teachers:

8.1 Examine where and how a variety of ingredients are grown, reared, caught, and processed, and consider sustainability and the impact of different choices on the environment;

8.2 Describe how preparation and cooking affects the sensory and nutritional properties of the ingredients;

8.3 Recognise the wide range of factors involved in food and drink choice, including influences such as preference, ethical belief, availability, season, need, cost, packaging, food provenance, culture, religion, allergy/intolerance, advertising, body image and peer pressure;

8.4 Demonstrate how to make informed choices to achieve a healthy, balanced diet (such as by using food labels, ingredients lists, nutrition information and health claims);

8.5 Explore a range of ingredients and processes from different culinary traditions, know their distinctive features and characteristics (traditional and modern variations of recipes, cooking methods, presentation and eating patterns) and demonstrate how to use this to inspire new ideas or modify existing recipes;

8.6 Explain how taste receptors and the olfactory system work and how sensory perception guides the choices that people make. Set up sensory panels to analyse and evaluate food.

9. Implementing good food safety and hygiene

When teaching food, accomplished teachers understand how children learn key concepts and skills, and use age/ability appropriate teaching strategies that engage learners, challenge a range of abilities, and build confidence and independence.

When teaching, accomplished teachers:

9.1 Demonstrate and apply the principles of cleaning, preventing cross contamination, safe storage of food including chilling, cooking food thoroughly and reheating food until it is steaming hot;

9.2 Apply food safety information on food labels when buying, storing and consuming food and drinks;

9.3 Describe food poisoning and its symptoms and undertake preventative measures to reduce the risk of illness through bacterial contamination and multiplication;

9.4 Recognise common allergens and demonstrate how to take preventative measures to reduce the risk of contamination and allergic reaction;

9.5 Understand the importance of good food safety and hygiene including knowing how to get ready to cook (such as having hair tied back, removing jewellery and nail varnish, thoroughly washing and drying hands before and after handling food, and wearing a clean apron);

9.6 Model exemplary practical skills and food safety and hygiene processes, including personal hygiene.

Further information

- British Nutrition Foundation: www.nutrition.org.uk
- Change4Life: <http://www.nhs.uk/change4life/Pages/change-for-life.aspx>
- Children's Food Trust: <http://www.childrensfoodtrust.org.uk/>
- Core Competences for children and young people aged 5-16 years: <http://www.nutrition.org.uk/foodinschools/competences/competences.html>
- Countryside Classroom: <http://www.countrysideclassroom.org.uk/>
- Design and Technology Association: www.data.org.uk
- FACE: <http://www.face-online.org.uk/>
- Focus on Food: www.focusonfood.org
- Food – a fact of life: <http://www.foodafactoflife.org.uk/>
- Food for life partnership: <http://www.foodforlife.org.uk/>
- Food Standards Agency: www.food.gov.uk
- Food Teachers Centre: <http://www.foodteacherscentre.co.uk/>
- National Curriculum (England) <https://www.gov.uk/government/collections/national-curriculum>
- NHS Choices: <http://www.nhs.uk/livewell/healthy-eating/Pages/Healthyeating.aspx>
- OFSTED: <https://www.gov.uk/government/organisations/ofsted>
- Public Health England: <https://www.gov.uk/government/organisations/public-health-england>
- School Food Plan: <http://www.schoolfoodplan.com/>

Appendix 1: Needs analysis audit

For each section, reflect on each statement and rate your current competence. This will help to determine your training needs.

Name:

Date:

Developing professional competence	1 (Low)	2	3	4	5 (High)	Comments
1.1						
1.2						
1.3						

Taking a whole school approach	1 (Low)	2	3	4	5 (High)	Comments
2.1						
2.2						
2.3						

Teaching the curriculum	1 (Low)	2	3	4	5 (High)	Comments
3.1						
3.2						
3.3						
3.4						
3.5						
3.6						
3.7						

Managing practical food classes	1 (Low)	2	3	4	5 (High)	Comments
4.1						
4.2						
4.3						
4.4						
4.5						
4.6						
4.7						
4.8						
4.9						
4.10						

Teaching food preparation and cooking	1 (Low)	2	3	4	5 (High)	Comments
5.1						
5.2						
5.3						
5.4						
5.5						
5.6						

Designing, making and evaluating food	1 (Low)	2	3	4	5 (High)	Comments
6.1						
6.2						
6.3						
6.4						
6.5						

Promoting and applying nutrition	1 (Low)	2	3	4	5 (High)	Comments
7.1						
7.2						
7.3						
7.4						
7.5						
7.6						

Applying aspects of consumer awareness	1 (Low)	2	3	4	5 (High)	Comments
8.1						
8.2						
8.3						
8.4						
8.5						
8.6						

Implementing good food safety and hygiene	1 (Low)	2	3	4	5 (High)	Comments
9.1						
9.2						
9.3						
9.4						
9.5						
9.6						

Actions:

-
-
-
-
-

Signed: _____

MY DEVELOPMENT RECORD	
Name	
Areas for development (where you have gaps, least confidence, need support or refresh)	Identification of specific professional development targets (to be addressed over the next phase of training)

Appendix 2: Skills

Skills taken from the GCSE Subject Content for *Food Preparation and Nutrition*.

	Skill Group	Techniques
1.	Knife skills	<ul style="list-style-type: none"> • Meat and fish – fillet a chicken breast, portion a chicken, remove fat and rind, fillet fish, slice raw and cooked meat and fish evenly and accurately • Fruits and vegetables – bridge hold, claw grip, peel, slice, dice and cut into even size pieces (ie batons, julienne)
2.	Prepare fruits and vegetables	<ul style="list-style-type: none"> • Mash, shred, scissor snip, scoop, crush, grate, peel, segment, de-skin, de-seed, blanch, shape, pipe, blend, juice and prepare garnishes whilst demonstrating the technical skills of controlling enzymic browning and spoilage and preventing food poisoning (wash and dry, where appropriate)
3.	Prepare combine and shape meat, fish and alternatives	<ul style="list-style-type: none"> • Roll, wrap, skewer, mix, coat, layer meat and fish, and shape and bind wet mixtures (such as fishcakes or meatballs) while demonstrating the technical skill of preventing cross contamination and handle high risk foods correctly
4.	Tenderise and marinate	<ul style="list-style-type: none"> • Demonstrate how acids denature protein and marinades add flavour and moisture when preparing meat, fish, vegetables and meat alternatives
5.	Select and adjust a cooking process	<ul style="list-style-type: none"> • Choose and adjust the cooking process and length of time to match the cut of meat/fish
6.	Weigh and measure	<ul style="list-style-type: none"> • Demonstrate accurate measurement of liquids and solids
7.	Preparation of ingredients and equipment	<ul style="list-style-type: none"> • Grease/oil, line, flour, evenly and with attention to finished product
8.	Use of equipment	<ul style="list-style-type: none"> • Use the blender, food processor, mixer and microwave
9.	Water-based methods that use the hob	<ul style="list-style-type: none"> • Steaming • Boiling and simmering • Blanching • Poaching

10.	Dry heat and fat-based methods that use the hob	<ul style="list-style-type: none"> • Dry frying • Pan (shallow frying) • Stir fry
11.	Using the grill	<ul style="list-style-type: none"> • Demonstrate for vegetables, meat, fish and other foods such as halloumi, seeds and nuts • Char • Grill or toast
12.	Using the oven	<ul style="list-style-type: none"> • Baking • Roasting • Casserole/tagines • Braising
13.	Make sauces	<ul style="list-style-type: none"> • Make a blended white sauce (starch gelatinisation): demonstrate understanding of how liquid/starch ratios effect the viscosity and how conduction and convection work to cook the sauce and the need to agitation. Roux and all-in-one blended sauce, infused sauce, veloute, bechamel • Make a reduction sauce, demonstrate how evaporation concentrates flavour and changes the viscosity of the sauce • Pasta sauce, curry sauce, gravy, meat sauce (including meat alternatives such as myco-protein and TVP) • Make an emulsion sauce: demonstrate the technical skill of how to make a stabilised emulsion such as a salad dressing, mayonnaise, hollandaise • Demonstrate how sauces can improve flavour, texture and balance of an overall dish
14.	Set a mixture - removal of heat (gelation)	<ul style="list-style-type: none"> • Use starch to set a mixture on chilling – layered desserts, custard, cheesecake
15.	Set a mixture - heating (coagulation)	<ul style="list-style-type: none"> • Use protein to set a mixture on heating – (denatured protein in eggs for quiche, choux pastry)
16.	Use of raising agents	<ul style="list-style-type: none"> • Demonstrate each of the following techniques: <ul style="list-style-type: none"> a) Use egg (colloid foam) as a raising agent – create air in liquid foam – whisking egg whites, whisked sponge

		<p>b) Use chemical raising agents – self-raising flour, baking powder</p> <p>c) Use steam in a mixture (choux pastry, batter)</p>
17.	Make a dough	<ul style="list-style-type: none"> • Demonstrate the technical skills of shortening, gluten formation, fermentation (proving). Bread, pastry, pasta
18.	Shaping and finishing a dough	<ul style="list-style-type: none"> • Roll out pastry, use a pasta machine, line a flan ring, create layers, (palmiers), proving/resting, pipe choux pastry, make bread roll shapes, flatbreads, pinwheels, pizza, calzone. Glaze and finish
19.	Test for doneness	<ul style="list-style-type: none"> • Demonstrate ability to use a temperature probe, knife/skewer, finger or ‘poke’ test, ‘bite’, visual colour check or sound to establish whether an ingredient or recipe is ready
20.	Judge and manipulate sensory properties	<ul style="list-style-type: none"> • Demonstrate how to taste and season during the cooking process • Change the taste and aroma through the use of infusions, herbs and spices, paste, jus, reduction • Demonstrate how to change texture and flavour, use browning (dextrinisation) and glazing, add crust, crisp and crumbs • Presentation and food styling – use garnishes and decorative techniques to improve the aesthetic qualities, demonstrate portioning and presenting

Appendix 3: Key processes underpinning food preparation and cooking

Working characteristics and functional properties of ingredients

Key processes that underpin food preparation and cooking processes:

- convection, conduction and radiation
- carbohydrate (gelatinisation, dextrinization)
- fat (shortening, aeration, plasticity and emulsification)
- protein (denaturation, coagulation, foam, gluten formation)
- enzymic browning