



A guide to introducing the Government's food-based and nutrient-based standards for school lunches from the School Food Trust

The School Food Trust has produced this guide to assist everyone involved in the provision of school food. It provides information on how to meet the Government's food-based and nutrient-based standards for school lunches.

This guide follows the School Food Trust's two previous guides, published last year:



A (revised) guide to the Government's new food-based standards for school lunches



A guide to introducing the Government's new food-based standards for all school food other than lunches

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1. Getting started

Getting started

An overview of the standards

The main focus of this guide is the nutrient-based standards. When the nutrient-based standards become law, the food-based standards for school lunches will also change. This means that schools are required to move from the interim food-based standards to the nutrient-based and final food-based standards. The food-based standards for school food other than lunches will remain the same. The school food regulations¹ detail all of these standards.

The standards	Timetable for meeting the standards
Interim food-based standards for school lunches	All schools from September 2006
Food-based standards for school food other than lunches	All schools from September 2007
Nutrient-based and final food-based standards for school lunches	Primary schools by September 2008 at the latest Secondary schools by September 2009 at the latest Special schools and Pupil Referral Units (PRUs) by September 2009 at the latest

Note: schools can make the transition from the interim food-based standards to the nutrient-based and final food-based standards for school lunches any time between now and the 2008/9 deadlines.

Whole school approach

We recommend that schools adopt a whole school approach to school food provision. It is important for different school food providers to work together, and for the whole school community (including head teachers, the senior team, governors, caterers, teachers, pupils and parents) to be involved, in order for schools to meet the nutrient-based and final food-based standards.

Look for boxes like this throughout this guide for more advice on how to adopt a whole school approach.

For further information on developing a whole school approach please refer to the Food in Schools (FiS) toolkit and the Healthy Schools National Audit Tool and resources www.healthyschools.gov.uk





The standards apply to:

- all local authority maintained primary, secondary, special and boarding schools and PRUs in England
- sixth forms on the premises of secondary schools
- all food and drink provided by local authorities or school governing bodies to pupils on and off school premises, during an extended school day (up to 6pm), including school trips. The only exception is for food provided on a residential school trip where the provider of the accommodation (not the local authority or governing body) also provides the food.

Please note:

- Academies are expected to comply with the terms and conditions as written into their funding agreements
- Independent schools are not specifically covered by the regulations, but they are encouraged to comply

- Where a special school or PRU caters for both primary and secondary aged pupils, a school lunch provided to a primary pupil must comply with the requirements for primary schools and a school lunch provided to a secondary aged pupil must comply with the requirements for secondary schools. For further information please see Technical notes.

The standards do not apply to:

- parties or celebrations to mark religious or cultural occasions
- occasional fund-raising events
- rewards for achievement, good behaviour or effort (although it is good practice to reinforce a whole school approach by using healthier food or non-food items to reward good behaviour and academic performance)
- food used in teaching food preparation and cookery skills, provided that any food prepared is not served to pupils as part of a school lunch
- food brought in on an occasional basis by parents or pupils.

Promoting consistent messages

A whole school approach to healthy eating includes promoting consistent messages. For this reason schools may want to consider developing a school food policy which could include, for example, guidance on the use of food as a reward.

2. Food-based standards

Food-based standards

The interim food-based standards for school lunches set minimum requirements for healthier food and restrictions on less healthy food served at lunchtimes. The food-based standards for all school food other than lunches (2007) were introduced to complement the standards for school lunches. For further information please see 'A guide to introducing the Government's new food-based standards for all school food other than lunches'.

<http://www.schoolfoodtrust.org.uk/resources/2007a>

After receiving feedback on the first set of regulations, some changes were made to the food-based standards for school lunches and the School Food Trust released 'A revised guide to the Government's new food-based standards for school lunches'.

<http://www.schoolfoodtrust.org.uk/resources/2007b>

The food-based standards for school lunches apply to:

- all school lunch services, including hot, cold and packed lunch services provided on a school day.

The food-based standards for school food other than lunch apply to all food provision up to 6pm, including:

- breakfast clubs
- mid-morning break services
- vending machines
- tuck shops
- after school snacks and meals.



Key to symbols

- food or food groups that must be provided
- food or food groups where the frequency or amount provided is restricted
- food or food groups that are no longer allowed

What are the food-based standards?

This table summarises the food-based standards for school lunches (interim and final*) and school food other than lunches. It shows which of the standards will and will not apply once the nutrient-based standards are adopted. It also shows which of the standards apply across the whole school day.

Food/food groups	Interim food-based standards for school lunches from 2006 (revised 2007)	Food-based standards for school food other than lunches from 2007	Final food-based standards for school lunches from 2008 (primary) and 2009 (secondary)
Fruit and vegetables ●	Not less than two portions per day per pupil must be provided; at least one should be vegetables or salad and at least one should be fruit	Fruit and/or vegetables must be provided at all school food outlets	Not less than two portions per day per pupil must be provided; at least one should be vegetables or salad and at least one should be fruit
Meat, fish and other non-dairy sources of protein ●	A food from this group must be provided on a daily basis	No standard	No standard
Red meat ●	Red meat must be provided at least twice per week in primary schools and at least three times per week in secondary schools	No standard	No standard
Fish ●	Fish must be provided at least once per week in primary schools and at least twice per week in secondary schools	No standard	No standard
Oily fish ●	Oily fish such as mackerel or salmon must be provided at least once every three weeks	No standard	Oily fish such as mackerel or salmon must be provided at least once every three weeks

* Please see Appendix 1 for a table of the final food-based standards



Food/food groups		Interim food-based standards for school lunches from 2006 (revised 2007)	Food-based standards for school food other than lunches from 2007	Final food-based standards for school lunches from 2008 (primary) and 2009 (secondary)
Meat products – categorised and restricted	●	A meat product (manufactured or homemade) from each of the four groups below may be provided no more than once per fortnight across the school day, providing the meat product also meets the standards for minimum meat content and does not contain any prohibited offal*: Group 1: Burger, hamburger, chopped meat, corned meat; Group 2: Sausage, sausage meat, link, chipolata, luncheon meat; Group 3: Individual meat pie, meat pudding, Melton Mowbray pie, game pie, Scottish (or Scotch) pie, pasty or pastie, bridie, sausage roll; Group 4: Any other shaped or coated meat product		
Starchy food	●	A food from this group must be provided on a daily basis	No standard	No standard
	●	Starchy food cooked in fat or oil should not be provided more than three times a week across the school day		
		Every day that a starchy food cooked in fat or oil is provided, a starchy food not cooked in fat or oil should also be provided	No standard	No standard
Bread	●	Bread with no added fat or oil must be provided on a daily basis	No standard	Bread with no added fat or oil must be provided on a daily basis
Deep-fried food – restricted	●	No more than two deep-fried food items, such as chips and batter-coated products, in a single week across the school day		
Milk and dairy food	●	A food from this group should be available on a daily basis	No standard	No standard

* Meat Products (England) Regulations 2003 www.opsi.gov.uk/si/si2003/20032075.htm

Food/food groups		Interim food-based standards for school lunches from 2006 (revised 2007)	Food-based standards for school food other than lunches from 2007	Final food-based standards for school lunches from 2008 (primary) and 2009 (secondary)
Salt and condiments – restricted	●	No salt shall be available to add to food after the cooking process is complete. Salt shall not be provided at tables or service counters Condiments, such as ketchup and mayonnaise, may only be available in sachets or in individual portions of not more than 10g or 1 teaspoonful		
Snacks – restricted	●	Snacks such as crisps must not be provided. Nuts [†] , seeds, vegetables and fruit with no added salt, sugar or fat are allowed. Dried fruit may contain up to 0.5% vegetable oil as a glazing agent		
		Savoury crackers and breadsticks can only be served with fruit, vegetables or dairy food as part of school lunch	Savoury crackers and breadsticks must not be provided	Savoury crackers and breadsticks can only be served with fruit, vegetables or dairy food as part of school lunch
No confectionery	●	Confectionery such as chocolate bars, chocolate coated or flavoured biscuits, sweets or cereal bars must not be provided		
Cakes and biscuits – restricted	●	Cakes and biscuits are allowed at lunchtime but must not contain any confectionery	Cakes and biscuits must not be provided	Cakes and biscuits are allowed at lunchtime but must not contain any confectionery
Drinking water	●	Free, fresh drinking water should be provided at all times		
Healthier drinks	●	The only drinks permitted during the school day are plain water (still or sparkling); low fat milk, or lactose reduced milk; fruit juice; vegetable juice; plain soya, rice, or oat drinks enriched with calcium; plain fermented milk (e.g. yoghurt) drinks; combination drinks; flavoured low fat milk. Please see the drinks table in Appendix 2 for guidance on composition, ingredients, additives and flavourings. Tea, coffee and hot chocolate containing less than 5% added sugars or honey are also permitted. Note: The School Food Trust strongly encourages schools to provide drinks that are unsweetened, unfortified and additive free, and is currently developing a voluntary Code of Practice to support this.		

[†] Be aware of nut allergies. Always refer back to the school and catering policies regarding nuts. Many schools are finding that cases of allergies from peanuts (as well as milk and eggs) are on the increase. The Anaphylaxis Campaign states that even the most extreme form of allergy – anaphylaxis – is manageable in schools and cross contamination can be significantly lowered by washing hands with soap after eating and handling nuts. We recommend you visit the www.allergyinschools.co.uk website for accurate and reliable information on managing allergies in schools.

Key challenges



These are some of the key challenges that have been highlighted by schools and caterers when implementing the food-based standards.

Cakes and biscuits

We know that some schools struggled to replace cakes and biscuits with alternative snacks that pupils like. Other schools managed the change successfully and we want to share good practice so that more schools can succeed. For caterers who provide a mid-morning break service, we recommend bread products with additional ingredients to make the snacks more appealing, e.g. fruit, vegetables, seeds, cheese, herbs and spices. Other snack ideas that require little preparation include fruit, yoghurts, malt loaf, English muffins, bagels and teacakes. Have a look at our website for more ideas.

www.schoolfoodtrust.org.uk/mid-morningsnacks

Oily fish

Some schools have reported that it is difficult to persuade pupils to eat oily fish. Other schools have had success using these strategies:

- Taster sessions so that pupils and parents can sample small amounts.
- Innovative dishes using other ingredients to complement the oily fish flavour, making it more palatable for young people, e.g. risotto, pasta, fish fingers or fish cakes, salmon sandwiches or wraps with salad.

Implementing the standards that apply across the school day

There are three food-based standards that apply across the school day; meat products, starchy food cooked in fat or oil and deep-fried food. In practice this means that everyone involved in school food provision will need to plan and work together to ensure the standards are met. For example, if sausage rolls are served at mid-morning break once a fortnight, no other group 3 meat product can be used in the same fortnight.

Oily fish – a type of fish which includes herring, mackerel, pilchards, salmon, sardines, trout and tuna (but not canned tuna).

Dental health

Dental decay is widespread among pupils in England with over half of 4 to 18 year olds in the UK affected². Dental decay is caused by having sugary food and drinks too often. Bacteria in the mouth take in sugar and produce acids which attack tooth surfaces. If these acid attacks happen frequently holes form in teeth. The food-based standards prohibit the provision of confectionery and restrict cakes and biscuits to lunchtime which reduces the opportunities for pupils to consume sugary foods. It is also important to be aware that dried fruit and fruit juices contain sugars. Tooth erosion (wearing away of the tooth enamel) is also a problem

affecting over 60% of school pupils². Acidic drinks such as fruit juice or carbonated drinks can contribute to tooth erosion and should therefore be restricted to meal times only.

Case studies

The wide range of case studies on our website shows examples of how some schools have successfully implemented the food-based standards using innovative schemes and initiatives. www.schoolfoodtrust.org.uk/casestudy-home.asp



3. Nutrient-based standards

Nutrient-based standards

The Government's nutrient-based standards for school lunches will become law in September 2008 for primary schools and September 2009 for secondary schools, special schools and Pupil Referral Units (PRUs).

The School Meals Review Panel³ considered three options for new standards for school food – nutrient-based standards only, food-based standards only, and a combination of food-based and nutrient-based standards. These options were assessed against a number of criteria, focusing on the need to reduce the consumption of fat, salt and sugar, and to increase the consumption of fruit and vegetables and food containing other essential nutrients.

In the report “Turning the Tables: Transforming School Food” the Panel concluded that:

- nutrient-based standards are clear and objective, and can help to reduce intakes of fat, sugar and salt, but may not increase intakes of fruit, vegetables and food containing other essential nutrients
- food-based standards are simple and transparent, can help to increase intakes of fruit, vegetables and oily fish, and are useful when working towards nutrient-based standards, but may not be sufficiently comprehensive to impact on intakes of fat, salt and sugar.

Their overall assessment was that a combination of food-based and nutrient-based standards brings together the strengths of both approaches, whilst minimising weaknesses.

To successfully implement the nutrient-based standards requires time and planning, so we recommend that schools begin working towards these standards as soon as possible. The next section will guide you through this process, but first it is important to understand why the nutrient-based standards are important and what they are.



Why we need nutrient-based standards



It is important that school lunches contain sufficient energy and micronutrients to promote good nutritional health in all pupils and to protect those who are nutritionally vulnerable.

Pupils need the right balance of food and nutrients to develop and grow. For many pupils, school lunch is the main meal of the day. It is important that school lunches contain sufficient energy and micronutrients to promote good nutritional health in all pupils and to protect those who are nutritionally vulnerable. This group includes those who are at risk of micronutrient deficiencies, those who are underweight and those who are overweight.

The nutrient-based standards for school lunches aim to make the food offered healthier by:

- increasing the vitamin and mineral content
- decreasing the fat, saturated fat, non-milk extrinsic (NME) sugars and sodium (salt) content.

The nutrient-based standards

There are 14 nutrient-based standards including energy. The following diagrams show which nutrients have minimum standards (because too little can be harmful) and which nutrients have maximum standards (because too much can be harmful).

The standard for energy is based on an average value, rather than a minimum or a maximum value. An average has been used to reflect the range of energy requirements of pupils, who are all developing and growing at differing rates and have different levels of activity.

Teaching and learning about food

Pupils need to know how to achieve a healthier diet outside of school.

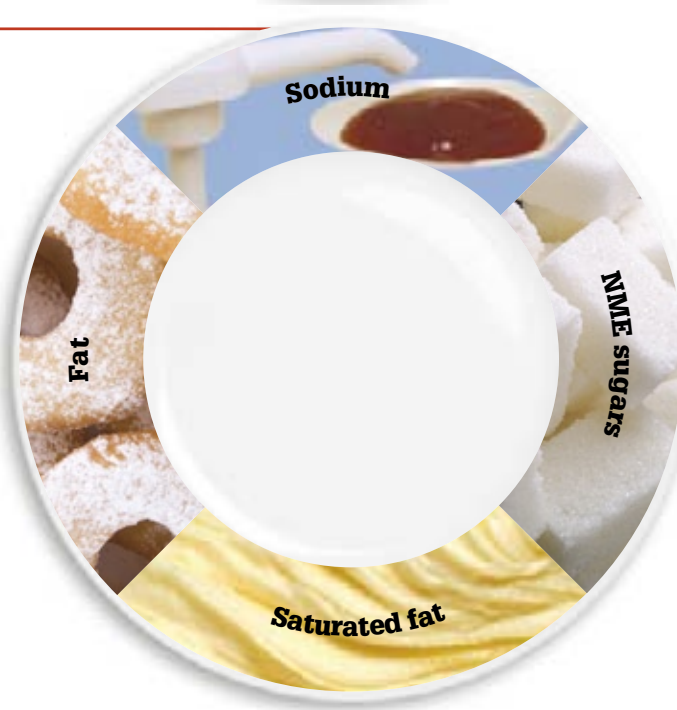
As well as providing healthy food, schools have an opportunity to teach pupils about the importance of food and cooking skills during lesson time and also during extra curricular activities. Teachers can use this guide to develop lesson plans about the food groups and nutrients.

At a glance – Nutrients with a minimum or maximum standard for school lunches

Minimum levels are set for these nutrients because too little can be harmful.



Maximum levels are set for these nutrients because too much can be harmful.



What are the nutrient-based standards?

Nutrient-based standards apply to an average school lunch, and relate to overall provision rather than individual consumption. Many schools (especially secondary schools) provide a choice of food and drink at lunchtime, so each pupil consumes a different balance of nutrients. Also, some pupils need to eat more than others depending on age, body size, metabolism and physical activity. Therefore, it is an average school lunch rather than every lunch consumed that must meet the nutrient-based standards.

- An average school lunch must provide:
- the amount of energy shown in the table (with 5% tolerance shown in brackets)
 - no more than the maximum amount for fat, saturated fat, NME sugars and sodium
 - at least the minimum amount for carbohydrate, protein, fibre, vitamin A, vitamin C, folate, calcium, iron and zinc.

The nutrient-based standards are derived from UK nutrient recommendations (Dietary Reference Values⁴, Salt and Health⁵) and were calculated based on typical mixed-sex primary and secondary schools.

Nutrient	Minimum or maximum	Primary	Secondary*
Energy (kJ) (kcal)		2215 ± 5% (111) 530 ± 5% (26.5)	2700 ± 5% (135) 646 ± 5% (32.3)
Carbohydrate (g)	Min	70.6	86.1
Non-milk extrinsic (NME) sugars (g)	Max	15.5	18.9
Fat (g)	Max	20.6	25.1
Saturated fat (g)	Max	6.5	7.9
Protein (g)	Min	7.5	13.3
Fibre (g)	Min	4.2	5.2
Sodium (mg)	Max	499	714
Vitamin A (µg)	Min	175	245
Vitamin C (mg)	Min	10.5	14.0
Folate (µg)	Min	53	70
Calcium (mg)	Min	193	350
Iron (mg)	Min	3.0	5.2
Zinc (mg)	Min	2.5	3.3

*NB Nutrient-based standards are different for single sex secondary schools and can be found in the Technical notes on page 5.3.

Energy



An average school lunch should provide 30% of the total daily energy requirement. This is based on the assumption that three meals a day are consumed and that lunch provides approximately one third of the daily intake. This is a significant contribution, but it must also be well balanced. Food energy (or energy from food) comes from carbohydrate, fat and protein and should be in the following proportions where specified:

Where should food energy come from?		
ENERGY	Not less than 50% from carbohydrate	Starch and intrinsic/ milk sugars
		Not more than 11% from non-milk extrinsic (NME) sugars
	Not more than 35% from fat	Unsaturated fat
		Not more than 11% from saturated fat
	Protein	Protein

Energy

Energy is vital for pupils' growth and development. It enables them to concentrate, learn and play at school.

An average school lunch must contain:

Nutrient	Primary	Secondary
Energy (kcal)	530 ± 26.5	646 ± 32.3

Why is this standard important?

Energy is vital for pupils' growth and development. It enables them to concentrate, learn and play at school.

Consuming more energy than you need can lead to weight gain and associated health problems like coronary heart disease and diabetes.

Sources of energy

At least 50% of our energy should come from carbohydrate, with smaller amounts from fat (not more than 35%) and protein.

Good practice

Encourage pupils to eat to their appetite and stop when they feel full. Hungry pupils should be encouraged to choose starchy carbohydrates instead of food high in fat and sugar.

Energy is most commonly expressed in “calories” but the actual unit is a kilocalorie. The modern metric units for energy are kilojoules (kJ). To convert kilojoules to kilocalories (calories) divide by 4.2.



Carbohydrate



Starchy carbohydrates should provide the main source of energy in the diet and should form the main component of a meal.

An average school lunch must contain not less than:

Nutrient	Min/Max	Primary	Secondary
Carbohydrate (g)	Min	70.6	86.1

Why is this standard important?

There are two types of carbohydrate – starches and sugars. Starchy carbohydrates should provide the main source of energy in the diet and should form the main component of a meal.

Sources of starchy carbohydrate

Bread of all types, rice, pasta, noodles, potatoes, yam, oats, cassava, couscous, breakfast cereals, wheat grains like bulgar wheat, lentils, red kidney beans and black eye beans.

These food items can be incorporated into dishes, e.g. spaghetti bolognaise, lasagne, curry with rice, cottage pie, shepherd’s pie, baked potato with beans, pasta bake and risotto.

Good practice

Wholegrain varieties of bread and cereals are best as they are good sources of fibre.

Non-milk extrinsic (NME) sugars



Food and drink high in NME sugars often provide calories but few other essential nutrients.

Non-milk extrinsic sugars (NME sugars)

All sugars in fruit juices, table sugar, honey, sucrose, glucose and glucose syrups added to food plus 50% of the sugars in canned, stewed, dried and preserved fruits⁶.

An average school lunch must contain not more than:

Nutrient	Min/Max	Primary	Secondary
Non-milk extrinsic (NME) sugars (g)	Max	15.5	18.9

Why is this standard important?

Food and drink high in NME sugars often provide calories but few other essential nutrients.

A diet high in NME sugars contributes to tooth decay.

A recent survey⁷ found that 50% of school meals eaten by primary school pupils contained too much added NME sugars.

Sources of NME sugars

Table sugar, jam, honey, sweetened drinks, cakes, pastries, ice cream, sweets, biscuits, confectionery and chocolate.

Good practice

Use less sugar in your recipes.

Serve fruit-based or dairy-based desserts instead of cakes and biscuits which often contain lots of added sugar.

Restrict access to sugar to be added to hot drinks.

When choosing prepared products, check the label and choose those products lower in sugar. Ask suppliers about the sugar content of food. Ask for products that meet the FSA voluntary Target Nutrient Specifications⁸.

Fat



High fat intake can lead to excess energy intake and weight gain.

Grill and bake food instead of frying.

An average school lunch must contain not more than:

Nutrient	Min/Max	Primary	Secondary
Fat (g)	Max	20.6	25.1

Why is this standard important?

Fat has more than twice the calories weight for weight of carbohydrate. It is a concentrated source of energy and provides essential fatty acids.

High fat intake can lead to excess energy intake and weight gain.

A recent survey⁹ found that 76% of school meals eaten by boys aged 11–18 contained too much fat.

Sources of fat

Butter, lard, margarine, fat spreads, oils or dressings such as mayonnaise, chips and other deep-fried food, potato waffles, garlic bread, pastries, cakes, biscuits, creamy puddings, meat or meat products such as pasties.

Good practice

Grill and bake food instead of frying.

When making sandwiches, try not using any butter or spread if the filling is moist enough. If using fat spread, choose a reduced-fat variety and spread thinly.

When choosing prepared products, check the label and choose those products lower in fat. FSA guidance on labelling states that 20g or more per 100g is 'high' and 3g or less fat per 100g is 'low'. Ask suppliers about the fat content of food. Ask for products that meet the FSA voluntary Target Nutrient Specifications⁸.

Saturated fat



A diet high in saturated fat can cause high cholesterol levels and increase the risk of diseases such as coronary heart disease, diabetes and some cancers.

An average school lunch must contain not more than:

Nutrient	Min/Max	Primary	Secondary
Saturated fat (g)	Max	6.5	7.9

Why is this standard important?

There are two types of fat – saturated fat (mainly from animals) and unsaturated fat (mainly from plants and fish).

A diet high in saturated fat can cause high cholesterol levels and increase the risk of diseases such as coronary heart disease, diabetes and some cancers.

Sources of saturated fat

Butter, lard, some margarine, cream, coconut oil or cream, palm oil, mayonnaise, salad cream, meat products (e.g. pies, burgers or sausages), hard cheeses (e.g. cheddar), cakes or biscuits.

Good practice

Choose lower fat dairy products – skimmed or semi-skimmed milk, low fat yoghurt and reduced fat cheese.

Choose lean cuts of red meat and remove the skin from chicken.

For cooking, use an unsaturated vegetable oil such as rapeseed oil or olive oil.

Avoid adding butter or oil to food (e.g. vegetables) after cooking.

When choosing prepared products, check the label and choose those products lower in saturated fat. FSA guidance on labelling states that 5g or more saturated fat per 100g is 'high' and 1.5g or less saturated fat per 100g is 'low'. Ask suppliers about the saturated fat content of food. Ask for products that meet the FSA voluntary Target Nutrient Specifications⁸.

Protein



Protein is important for the growth and repair of body tissues like muscles.

An average school lunch must contain not less than:

Nutrient	Min/Max	Primary	Secondary
Protein (g)	Min	7.5	13.3

Why is this standard important?

Protein is important for the growth and repair of body tissues like muscles. Pupils are growing fast so protein is particularly important for them.

Sources of protein

Meat, fish, milk, cheese, eggs, yoghurt, nuts* and seeds, red kidney beans, chickpeas, lentils, cereals and meat alternatives (e.g. tofu).

These food items can be incorporated into dishes, e.g. chicken and vegetable jambalaya, chickpea and cauliflower curry, salmon sandwiches, cauliflower cheese, nut roast*, chicken casserole, omelette with ham and cheese.

Good practice

Including plant protein as well as animal protein on your menu will ensure that pupils are eating protein from a variety of sources.

Vegetarian pupils should have adequate protein intakes if they eat cereals, beans and lentils, soya products, eggs, milk and dairy products. For vegan or lactose intolerant pupils, soya, oat or rice drinks enriched with calcium provide an alternative to milk.

*Be allergy aware, visit www.allergyinschools.co.uk

Dietary Fibre



Add pulses and vegetables to stews and pies to add fibre.

An average school lunch must contain not less than

Nutrient	Min/Max	Primary	Secondary
Fibre (g)	Min	4.2	5.2

Why is this standard important?

Fibre is essential for a healthy digestive system. It assists bowel function and prevents problems such as constipation.

A recent survey⁹ found that 79% of school meals eaten by boys aged 11–18 did not contain enough fibre.

Sources of fibre

Brown rice, oats, wholegrain cereals, muesli, potatoes with skins, wholemeal pasta, wholemeal bread, bulgar wheat, lentils, chickpeas, red kidney beans, fruit and vegetables.

These food items can be incorporated into dishes, e.g. vegetable and lentil bake, chilli con carne served with brown rice, jacket potato with beans and fruit salad.

Good practice

Choose wholegrain, wholemeal or brown varieties where possible.

If pupils reject wholemeal varieties, use combinations of wholemeal and white varieties to encourage consumption.

Leave the skins on potatoes and do not peel fruit or vegetables.

Add pulses and vegetables to stews and pies to add fibre.

Sodium



Limit the amount of salt added during cooking and instead flavour with herbs and spices.

An average school lunch must contain not more than:

Nutrient	Min/Max	Primary	Secondary
Sodium (mg)	Max	499	714

Why is this standard important?

Sodium is a component of salt. Salt is needed to maintain fluid balance in the body and for nerve and muscle function.

Too much salt can cause high blood pressure, which may lead to conditions such as stroke, heart disease and kidney problems.

Most salt consumed is contained within processed food.

Sources of sodium

Ready made soups and sauces, gravy, processed food, some breakfast cereals, salty snacks (e.g. crisps and salted nuts), bacon, ham, sausages, pizza, cheese and condiments.

Good practice

Limit the amount of salt added during cooking and instead flavour with herbs and spices.

Cook meals from raw ingredients rather than using manufactured products high in salt.

When choosing prepared products, check the label and choose those products lower in salt. FSA guidance on labelling states that 1.5g or more salt (0.6g sodium) per 100g is 'high' and 0.3g or less of salt (0.1g sodium) per 100g is 'low'. Ask suppliers about the salt content of food. Ask for products that meet the FSA voluntary Target Nutrient Specifications⁸.

Vitamin A



Yellow, orange and red coloured fruits and vegetables contain the most vitamin A.

An average school lunch must contain not less than:

Nutrient	Min/Max	Primary	Secondary
Vitamin A (µg)	Min	175	245

Why is this standard important?

Vitamin A is important for growth and tissue repair, good eyesight and the immune system.

Sources of vitamin A

Oily fish, eggs, liver, cheese, butter and milk.

Yellow, orange and red coloured fruits and vegetables such as carrots, peppers, apricots, oranges, papaya, mango, butternut squash, sweet potato, tomatoes and dark green leafy vegetables.

These food items can be incorporated into dishes, e.g. salmon fish cakes, baked sweet potato wedges, red pepper and tomato omelette, carrot and coriander soup and fruit salad.

Good practice

Serve a variety of fruit and vegetables.

Yellow, orange and red coloured fruits and vegetables contain the most vitamin A.

Vitamin C



Vitamin C is an antioxidant which helps to protect the body from infections and disease.

An average school lunch must contain not less than:

Nutrient	Min/Max	Primary	Secondary
Vitamin C (mg)	Min	10.5	14.0

Why is this standard important?

Vitamin C is needed for wound healing and the structure of blood vessels and skin.

Vitamin C is an antioxidant which helps to protect the body from infections and disease.

Vitamin C enhances iron absorption.

Sources of vitamin C

Fruits – especially citrus fruits (oranges, lemons, limes, grapefruit), berries and kiwi fruits.

Vegetables (including frozen) – especially broccoli, green and red peppers and sweet potatoes.

Potatoes.

These food items can be incorporated into dishes, e.g. jacket potato with salad, lemon chicken, berry smoothie, fruit salad, mixed vegetable hotpot and casserole.

Good practice

Raw fruit and vegetables contain the most vitamin C.

Vitamin C may be lost during preparation and cooking. Prepare and cook food as close to lunchtime as possible.

Steam vegetables to minimise vitamin losses or cook them in a minimum volume of water.

Folate



Folate is essential for blood cells, the nervous system and helps prevent anaemia.

An average school lunch must contain not less than:

Nutrient	Min/Max	Primary	Secondary
Folate (µg)	Min	53	70

Why is this standard important?

Folate is essential for blood cells, the nervous system and helps prevent anaemia.

It is particularly important in the early stages of pregnancy as it helps to protect the baby from neural tube defects such as spina bifida.

A recent survey⁹ found that 74% of school meals consumed by girls aged 11–18 did not contain enough folate.

Sources of folate

Liver, yeast extract, orange juice, green leafy vegetables (e.g. spinach), green beans, beetroot, chickpeas, black-eye beans, broccoli, peas and brown rice.

Breakfast cereals are often fortified with folate.

These food items can be incorporated into dishes, e.g. pea and ham soup and spinach and potato curry.

Good practice

Folate may be lost during the cooking process. Prepare and cook food as close to lunchtime as possible.

Steam vegetables to minimise vitamin losses or cook them in a minimum volume of water.

Calcium



Pupils who do not have enough calcium are at risk of developing osteoporosis or brittle bones in later life.

An average school lunch must contain not less than:

Nutrient	Min/Max	Primary	Secondary
Calcium (mg)	Min	193	350

Why is this standard important?

Calcium is essential for strong bones and teeth, especially during childhood and adolescence when the skeleton is growing. It is also important for muscle and nerve function as well as blood clotting.

Pupils who do not have enough calcium are at risk of developing osteoporosis or brittle bones in later life.

A recent survey⁹ found that 80% of school meals eaten by boys aged 11–18 and 77% of school meals eaten by girls aged 11–18 did not contain enough calcium.

Sources of calcium

Dairy products such as milk, cheese, yoghurt, canned fish with bones (e.g. salmon and pilchards), broccoli, cabbage, dried fruits, tofu, red kidney beans, chickpeas and soya beans.

White and brown bread are fortified with calcium.

These food items can be incorporated into dishes, e.g. cheese and potato pie, salmon quiche, rice pudding and custard made with milk.

Good practice

For people who do not drink milk, choose soya, oat or rice drinks enriched with calcium.

Use lower fat dairy products; they contain as much calcium as their full-fat equivalents.

Iron



Iron deficiency in pupils may be linked with slower intellectual development and poor behaviour in the longer term.

An average school lunch must contain not less than:

Nutrient	Min/Max	Primary	Secondary
Iron (mg)	Min	3.0	5.2

Why is this standard important?

Iron is needed for the production of red blood cells which carry oxygen around the body. Iron also plays an important role in maintaining a healthy immune system. It is especially important for teenage girls.

Iron deficiency can cause anaemia which may result in loss of stamina, headaches and insomnia.

Iron deficiency has also been shown to lower resistance to infection.

Iron deficiency in pupils may be linked with slower intellectual development and poor behaviour in the longer term⁴.

A recent survey⁹ found that 98% of school meals eaten by girls aged 11–18 and 87% of school meals eaten by boys aged 11–18 did not contain enough iron.

Sources of iron

Red meat, offal (especially liver and kidney), canned fish, eggs, dark green leafy vegetables, peas, wholegrains (e.g. brown rice), nuts* and seeds, red kidney beans, black-eye beans, lentils, chickpeas, dried apricots and raisins.

These food items can be incorporated into dishes, e.g. lamb casserole, houmous, spaghetti bolognese, shepherd's pie, mixed bean wrap and dried fruit compote.

Breakfast cereals are often fortified with iron.

Good practice

Iron from animal sources is more easily absorbed by the body than iron from plant sources, but plant sources are important because they provide most of the iron in the diet.

Consuming food high in vitamin C at the same time as food containing iron enhances iron absorption.

Vegetarian dishes should regularly include a variety of lentils and peas, eggs, dark green leafy vegetables and wholegrains.

*Be aware of nut allergies visit www.allergyinschools.co.uk

Zinc



Zinc is used by the body and has a number of important functions, including growth and tissue repair, wound healing and the immune system.

An average school lunch must contain not less than:

Nutrient	Min/Max	Primary	Secondary
Zinc (mg)	Min	2.5	3.3

Why is this standard important?

Zinc has a number of important functions, including growth and tissue repair, wound healing and the immune system.

Sources of zinc

Red meat, offal (especially liver and kidney), eggs, fish, milk and other dairy products, cereals, red kidney beans, soya products, lentils, chickpeas and nuts*.

These food items can be incorporated into dishes, e.g. cottage pie, roast pork or beef, lentil bake, brown rice and vegetarian bolognese using soya mince.

Good practice

Vegetarian dishes should regularly include whole grain cereals, kidney beans, milk and eggs.

*Be aware of nut allergies, visit www.allergyinschools.co.uk

4. Implementing and monitoring the standards

Implementing and monitoring the standards

Responsibility for the provision of school meals lies with the local authority or directly with the school if the local authority has delegated the school meals budget. This includes ensuring that the food provision meets the current school food standards. In practice this involves deciding what dishes can be served and what ingredients to use.

Schools must be able to demonstrate that their food provision meets the food-based standards and an average school lunch meets the nutrient-based standards (for further information on what an average school lunch is, see the Technical notes. This involves menu planning and nutrient analysis. The following sections of the guide will take you through the process and considerations step by step.

If your school has a contract or Service Level Agreement (SLA) with an external catering provider (e.g. private caterer, local authority catering provider) it is possible that they will complete the necessary menu planning and nutrient analysis. This will depend on the contract or service agreement you have with them. We recommend you familiarise yourself with the process so that you are confident the standards are being met.

Evidence of compliance will include providing details of menus, portion sizes and provision mix, and demonstrating (for example through tables and graphs) how the nutrient profile of an average school lunch compares to the standards. For further information, see the Technical notes.

Working towards the final food-based and nutrient-based standards

Three main steps have been identified to help you with the transition. It is important to note that these steps are guidelines and each school, local authority or catering provider will need to take into account a variety of local considerations which affect their situation. Some of these considerations have been highlighted under steps 2 and 3, and in the case studies.

Schools must comply with the final food-based and nutrient-based standards by September 2008 (primary) and September 2009 (secondary, special and PRUs). We recommend that you start working towards these standards now, in order to allow time to make the necessary changes to your food provision and to engage the whole school community. It is good practice to introduce small changes over time to successfully implement the standards.



1

Step one



Roles and responsibilities vary depending upon the nature of the catering service.

Get to know the standards and clarify roles and responsibilities

The final food-based and nutrient-based standards are explained in sections 2 and 3.

Roles and responsibilities

There are many people involved in school food provision so roles and responsibilities will vary depending upon the nature of the catering service. There are three main models of school lunch provision. The table below outlines where the responsibilities lie. You will need to refer to your contract or service level agreement to clarify the situation at your school.

The Food Standards Agency and the National Governors Association, in collaboration with the School Food Trust, have published a revised version of Food Policy in Schools – A strategic policy framework for governing bodies¹⁰.

The key focus of the publication is to help equip school governors with the necessary information to develop food policies for their schools. It guides governors step by step through actions they can take and provides practical advice for governing bodies on how to tackle all aspects of food in school, from school lunches to vending machines.

Type of catering provided	Responsibility for meeting the standards	Menu planning	Providing evidence of compliance
Local authority organised service	Local authority or governors if the budget is delegated	Catering provider, with or without input from school	Provider
In-house catering service	Governors	Catering manager	Catering manager
Contract between school(s) and caterer	Governors	Catering provider, with or without input from school	Catering provider

2

Step two



Check that all food and drink provision in all outlets is accurately recorded. It will be necessary to involve all school food providers in this process.

Check school food provision against the final food-based standards for school lunches and the food-based standards for school food other than lunches

Schools must be able to demonstrate that their food provision across the school day meets the food-based standards. Check that all food and drink provision in all outlets is accurately recorded and meets the food-based standards. It will be necessary to involve all school food providers in this process. To help schools achieve this, we have developed the following tool for self-monitoring.

School Food Checklist: This is an online tool which can be used to monitor food provision at lunchtime and across the school day. The user inputs information about their provision and the tool gives instant feedback as a traffic light report. The report indicates

whether food-based standards are being met (green), not being met (red) or there is incomplete information (amber). This will give you a complete picture of your school's total provision and enable you to check compliance. It is important to note that the accuracy of the outcome will depend on the accuracy of the information entered. To use this tool go to: **<http://provisiontool.schoolfoodtrust.org.uk>**

Communication is key

Remember that three of the food-based standards: deep-fried food, meat products and starchy food cooked in fat or oil apply across the school day.

There needs to be discussion between the lunchtime catering provider and other people involved in school food provision (e.g. parents running a mid-morning tuck shop) to ensure these standards are being met.

2

Ensure your provision meets the final food-based standards. Meeting these standards will make it easier to meet the nutrient-based standards.

Consider setting up an action group

To ensure that the changes you make have a sustainable impact we suggest you make them within the context of a 'whole-school approach'. The whole-school approach aims to develop an ethos that supports and promotes health and well being, through the participation of everyone within the school community.

First and foremost we advise that you do not do this alone. The best solutions are always found amongst a group of people who know the specific issues your school faces. Form an action group based within your school structure. Try to include:

- a senior member of catering staff
- a member of supervision staff
- a combination of members from the school council and other young people who want to get involved
- a member of the school senior management team
- a parent, governor or member of the community
- if in place, the School Nutrition Action Group
- if in place, the Food in Schools Lead and/or the Healthy Schools Co-ordinator.



3

Step three



Successfully implementing the nutrient-based standards will take time. Start working towards them now to allow enough time to ensure your provision is compliant. See case studies in this guide for more information.

Check school lunch provision against the nutrient-based standards for school lunches

This involves a nutrient analysis of all food and drinks available at lunchtime.

To do this you will need the following information:

- menu cycle (between 1 and 4 weeks)
- list of any other food and drink items available at lunchtime (excluding bread provided daily as an additional item)
- standardised recipes and product specifications¹⁵
- portion sizes (to cater for a wide range of appetites in schools, caterers will use their skill and knowledge of the pupils to offer appropriate size portions. For the purposes of nutrient analysis, an average portion may be used)
- provision mix (number of portions provided for each item on the menu cycle)
- number of pupils eating a school lunch. For further information see the Technical notes.

To carry out the nutrient analysis, you can use:

- **professional support** (e.g. state registered dietitian or registered nutritionist) and/or
- **menu planning and nutrient analysis software.**

Nutrient analysis (with or without the use of software) requires some expertise and nutritional knowledge. For more information see the Technical notes. Schools are advised to consider using professional support to ensure that the nutrient analysis is done correctly.

Nutrient analyses for groups of schools

Nutrient analyses can be carried out for a group of schools provided the schools have a similar age and sex profile, the same menu and similar provision mix.

3

Professional support

Professional support can be provided by a state registered dietitian or a registered nutritionist with experience of menu planning and nutrient analysis. Dietitians should be registered with the Health Professions Council and nutritionists should be registered with the Nutrition Society. Speak to your local authority or Primary Care Trust to find out if there are any professional resources in your area. Otherwise, use the following websites to find a registered professional in your area:

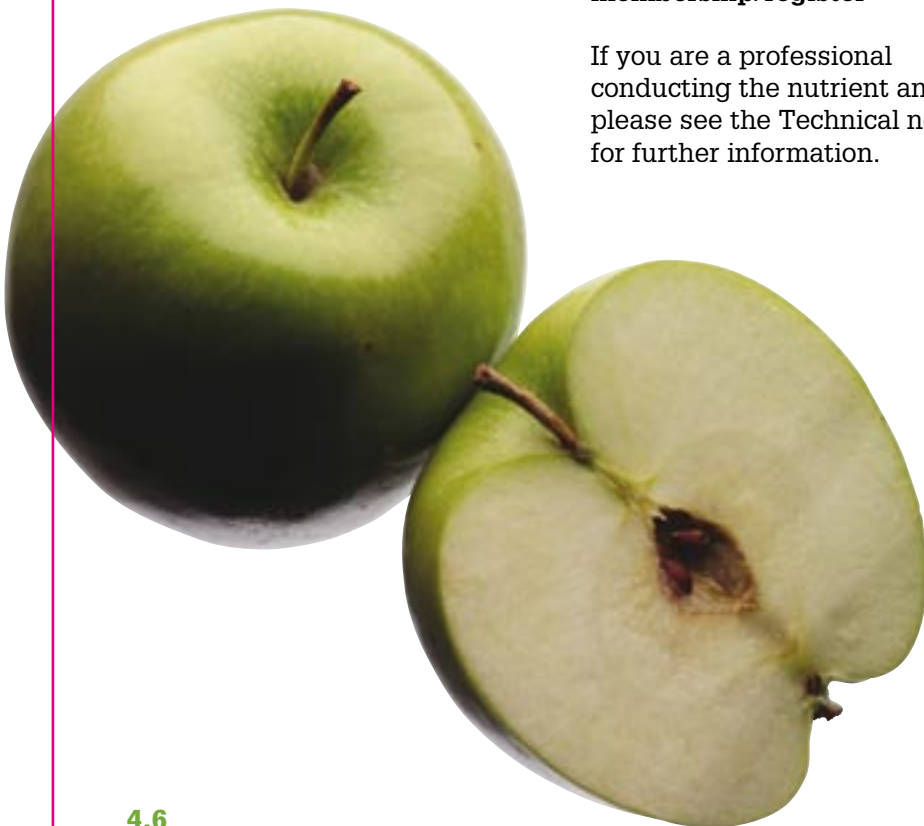
www.dietitiansunlimited.co.uk

**[www.nutrition society.org.uk/
membership/register](http://www.nutrition society.org.uk/membership/register)**

If you are a professional conducting the nutrient analysis, please see the Technical notes for further information.

Menu planning and nutrient analysis software

Nutrient analysis software is the most efficient method for analysing the nutrient content of the food and drink provided. It is possible to do it manually, using food composition tables, but the calculations are time consuming. The School Food Trust commissioned independent reviews of the main menu planning and nutrient analysis software¹⁶ packages and the reviews are available on the Trust's website.



Using your evidence



School food standards and the National Healthy Schools Programme (NHSP)

Compliance with the standards will also help you to achieve the Healthy Eating component of the NHSP which stipulates that schools must:

- ensure that breakfast club, mid-morning break, tuck shop, vending and after school clubs (where available in school) meet or exceed current school food standards (criterion 2.6)
- have a school lunch service that meets or exceeds current school food standards (criterion 2.7).

School food standards and Ofsted

Ofsted will be monitoring a school's approach to healthy eating as part of its regular inspections of schools. Ofsted will expect schools to present evidence about their general approach to healthy eating. Within the Ofsted Self Evaluation Form (SEF) there is a requirement for schools to confirm that they are meeting the nutritional standards, where they are responsible for doing so.

Sustainability

A sustainable school is one which integrates high standards of achievement and behaviour with the goals of healthy living, environmental awareness, community involvement and citizenship. There are eight "doorways" in the framework for sustainable schools, one of which is "food and drink". Increasing the number of tenders from small and local producers can also benefit local communities. For more information visit: www.teachernet.gov.uk/sustainableschools/ and the Public Sector Food Procurement Initiative website at www.defra.gov.uk/farm/policy/sustain/procurement/school-food.htm

Step by step guide

1

Get to know the standards and clarify roles and responsibilities

- The food-based and nutrient-based standards are explained in the previous sections 2 and 3.
- Roles and responsibilities vary depending upon the nature of the catering service.

2

Check all school food provision across the school day against the food-based standards

Use our online school food checklist **www.schoolfoodtrust.org.uk/checklist**

Remember that three of the food-based standards (deep-fried food, meat products and starchy food cooked in fat or oil) apply across the school day.

Ensure that lunchtime provision meets the food-based standards. Meeting these standards will make it easier to meet the nutrient-based standards.

3

Check school lunch provision against the nutrient-based standards

This involves a nutrient analysis of all food and drinks available at lunchtime.

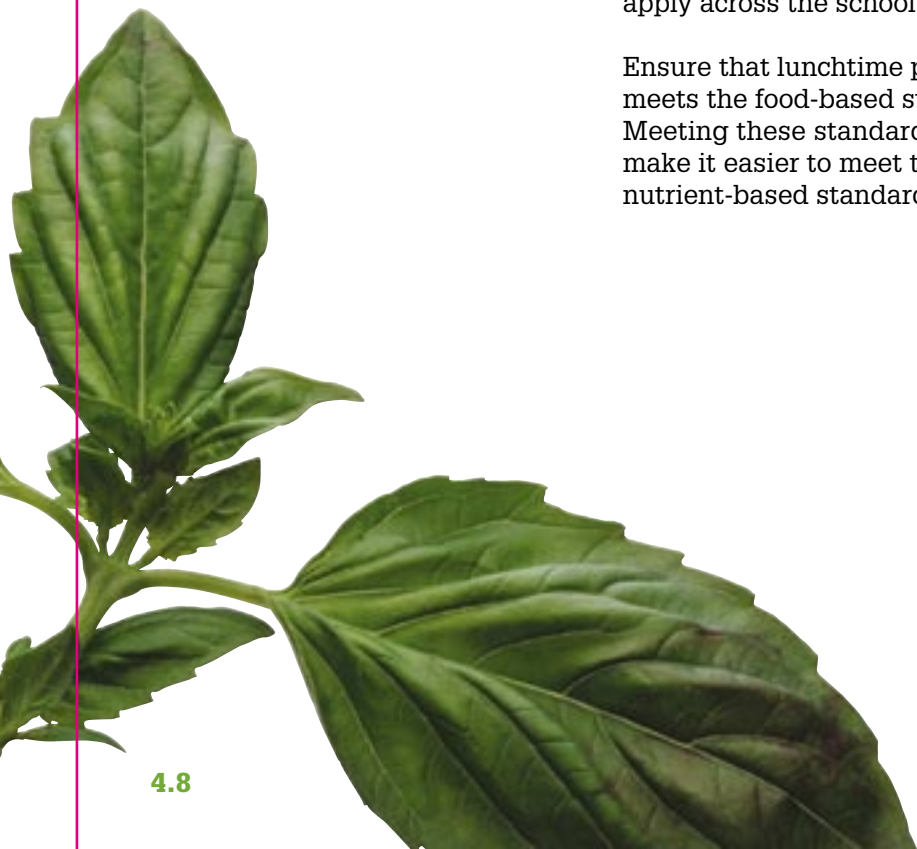
To do this you will need the following information:

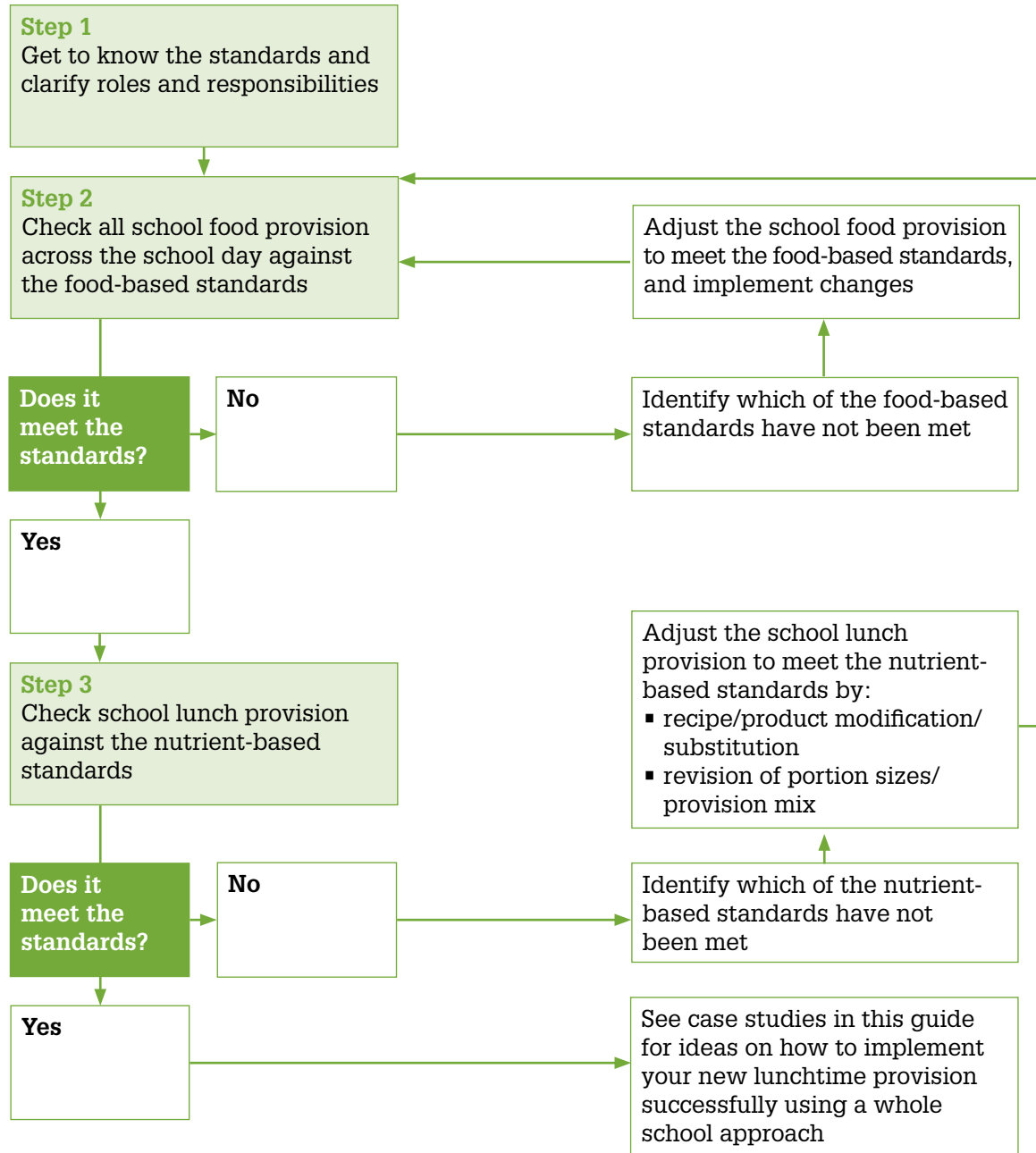
- menu cycle (between 1 and 4 weeks)
- list of any other food and drink items available at lunchtime (excluding bread provided daily as an additional item)
- standardised recipes and product specifications
- portion sizes
- provision mix
- number of pupils eating a school lunch (see Technical notes).

To carry out the nutrient analysis, you can use:

- **professional support** (e.g. state registered dietitian or registered nutritionist)
- **menu planning and nutrient analysis software.**

Successfully implementing the nutrient-based standards will take time. Start working towards them now to allow enough time to ensure your provision is compliant. See case studies in this guide for more information.





Managing diverse diets and special dietary needs



To meet the dietary needs of all pupils, ensure that the choices provided address cultural, religious and special dietary requirement needs.

This section addresses some of the factors that should be considered when providing school lunches for pupils with diverse diets and special dietary needs, when implementing the school food standards. It provides information and guidance on some of the most common conditions where diet is an important factor. We recommend that the advice of a medical professional should be sought when special diets are required.

Why diverse diets?

Many schools in England have a diverse population from different ethnic and religious groups. Schools must assess the dietary needs of their population in order to provide a popular and viable service.

What is a special diet?

A special diet is one that cannot be selected freely from the main school lunch choices available. This might be due to an allergy, intolerance or other medical need.

Providing special diets

School lunch menus are designed for the majority of the school population, so some pupils with special dietary needs may need to be catered for individually. It will be up to the school to decide whether this is feasible although every effort should be made to cater for all pupils' needs.

Schools should consider adopting a policy and procedure to ensure that a request for a special diet is handled in an efficient and appropriate way. It is good practice for these requirements to be written into any contracts that are developed with caterers. Catering providers and local authorities may already have policies and procedures in place.

Providing a special diet requires partnership working to ensure that the provision for the pupil is delivered to a safe and high standard. This may involve a number of individuals both inside and outside of the school and it is important to keep everyone informed.

Religious diets

Many people follow diets related to their culture or religious belief. This table is a guide to some of these diets but is not a definitive list. Schools can use this information to assist with planning appropriate menus for their school population. Even within these religions, there will be variations of adherence to these diets. It is therefore essential that pupils and parents are consulted.

	Unlikely to eat	Fasting
Buddhist	Chicken, pork, beef, lamb or mutton, shellfish, butter, ghee or lard	Will fast
Hindu	Beef, lard	May fast
Jewish	Pork, non-kosher meat, butter, ghee or lard, shellfish. Meat and milk products must not be served at the same meal or cooked together.	Will fast
Muslim	Meat or poultry that is not halal, lard or pork	Will fast
Sikh	Beef, pork, lard. Will not eat meat slaughtered or prepared by another religion e.g. kosher or halal	May fast

Food allergies and intolerances

Food allergy



A form of food intolerance where there is evidence of an abnormal immune system reaction. When someone has a food allergy, their immune system reacts to a particular food as if it isn't safe. If someone has a severe food allergy, this can cause a life-threatening reaction (Food Standards Agency).

Food intolerance



A reproducible and adverse reaction to a specific food or ingredient. Food intolerance doesn't involve the immune system and is generally not life-threatening, but if someone eats a food they are intolerant to, this could make them feel ill or affect their long-term health (Food Standards Agency).

It is important that schools work closely with parents to ensure that pupils learn to manage their allergies and intolerances by making appropriate choices supported by school staff. More information on different types of

allergy and intolerance can be found at www.eatwell.gov.uk/healthissues/foodintolerance/. This table describes some of the most common food allergies and intolerances and how reactions can be avoided.

	What is it?	Advice for schools and caterers
Nuts (can also apply to seeds)	Nut allergies usually last a lifetime and reactions can be caused by exposure to small amounts of nuts on the skin and inhalation as well as eating them in food.	Sufferers should avoid all nut products and those in which traces of nuts may be found. More obvious nut products include unrefined nut oils and marzipan, but traces of nuts are often found in products such as biscuits, salad dressings and sauces. As nut allergies can be severe, it is crucial that there is a protocol put in place when a pupil has a nut allergy in school. Even the most extreme form of allergy – anaphylaxis – is manageable in schools. More detailed information on coping with allergies can be found at www.allergyinschools.org.uk
Gluten	Coeliac disease is a condition of sensitivity to gluten. Gluten is a protein found in wheat, barley, rye and oats. This condition is an auto-immune disease that results in the body's own immune system attacking itself. More information can be found at www.coeliac.co.uk	Food that can be included in a gluten-free diet include fruit, vegetables, meat, meat alternatives, milk, and milk products. Grains such as rice and maize can also be eaten. There are now many specific gluten-free products available. Food that usually have to be avoided include those that have been made from wheat-flour such as bread and pasta, and many breakfast cereals.



	What is it?	Advice for schools and caterers
Lactose	Lactose is the main carbohydrate in milk and milk products. Lactose intolerance results when lactose is not broken down effectively and can cause adverse affects in the body.	It is normally unnecessary to eliminate all dairy products from the diet and where possible this should be avoided to prevent further complications such as lack of calcium. Symptoms are often related to the amount of lactose consumed and the amount an individual can tolerate will vary. Milk products taken at the same time as a meal and those with low lactose content such as hard cheeses and yogurts are normally better tolerated. Dairy alternatives are also available.
Casein	Some people react to proteins in cow's milk called casein and whey. Casein is in the curd that forms when the milk sours and whey is the watery part left when the curd is removed.	Cow's milk proteins need to be excluded from the diet. This will mean avoiding milk and other products that contain casein or whey including butter, cheese and yoghurt. Some processed products may also contain traces of casein or whey. A medical professional should give advice on what alternatives are best to use and how to ensure adequate calcium intake.
Egg	The main causes of adverse reaction to egg are proteins in the whites of eggs.	Eggs and all food containing egg and albumen (egg white) should be avoided. This includes all eggs and not just chicken eggs. This can often be difficult, as many manufactured products contain eggs e.g. pasta and mayonnaise. Cooking can break down some of these proteins so sufferers may be able to tolerate eggs in some cooked products.

Diets for pupils with additional support needs



Autistic Spectrum Disorder

Pupils with Autistic Spectrum Disorder (ASD) can be selective about the food they eat (see Selective eaters below) and may also be sensory impaired. This means that they find it difficult to use different senses at the same time. They may therefore find the dining room experience stressful due to the levels of noise and other stimuli present. Where this is the case, staff should work with the pupil and the parents to create a suitable environment.

Selective eaters

Selective eaters tend to eat a limited variety of food and often avoid certain food groups altogether. Some individuals also require food to be prepared in a certain way, specific utensils to eat food, or a certain type of environment. Pupils may be selective eaters for a number of different reasons including medical history, digestive problems, anxiety and conditions such as Autistic Spectrum Disorder. It is essential that a dietitian or medical professional is involved to ensure that they are getting sufficient amounts of essential nutrients. It may be possible to introduce new food gradually.

Texture modification

Some pupils may require their food to be of a consistency that makes it easier for them to chew and swallow, for example pureed, mashed, moistened, softened or prepared into thickened drinks. These types of diets are usually required for pupils with a medical condition such as cerebral palsy, those with poor oral motor skills and those who have damage to their mouth or throat. Where this is the case, pupils will often be identified and monitored by a speech and language therapist or other health professional. Individualised eating and drinking plans may be developed and schools and caterers should work closely with dietitians and other health professionals to ensure that these plans can be followed.

It is always important to make food look appealing to the pupil and this is equally true for those who require the texture of their food to be modified. Where possible, food should be presented in an identifiable way. This can be done by separating the different food on the plate so that pupils can still experience the different tastes. Special plates with separate compartments can be purchased to do this. Moulding food into its original shape can also be done using food moulds.

Eating disorders

The onset of an eating disorder usually occurs during adolescence, although it is recognised that it can develop at an earlier age. The causes of eating disorders are often complex and may be the result of a number of factors such as low self-esteem, depression, stress or anxiety, family issues, bereavement and bullying.

Symptoms can include health problems, changes in weight, lack of concentration, tiredness, withdrawal from friends and activities and anxiety or obsessive behaviour. Other signs that someone may have an eating disorder could also be the

avoidance of meals or going to the bathroom immediately after eating, being obsessed with food and/or having a distorted body image. The symptoms of eating disorders can often go unnoticed as they will present themselves in many forms and often sufferers will be very secretive about their condition.

Schools are not expected to diagnose eating disorders but if a pupil is displaying symptoms and an eating disorder is suspected, it is best to seek specialist help on how to deal with this appropriately. Some schools and local authorities will already have policies and procedures in place for this.



Case studies: Primary Schools

To assist schools to meet the final food-based and nutrient-based standards for school lunches, the School Food Trust conducted three pilots in primary schools. The purpose of the pilots was to fast-track these schools to meet the standards ahead of the September 2008 mandatory deadline, in particular to highlight the challenges faced and how these were overcome. The Trust worked with the schools using the whole school approach engaging with key stakeholders including pupils, parents, school cooks, lunchtime supervisors, head teachers and the catering providers. The School Food Trust would like to thank all those involved in the pilots, for volunteering their time, invaluable experience and commitment to the healthy eating agenda. Their valued support has allowed the development of these case studies that will be beneficial to other schools embarking on the same journey.



Case study 1:

George Dixon Primary School, Birmingham in partnership with Birmingham City Council's catering provider (Cityserve Direct Services)



Context

Description of the school, pupils and lunchtime provision

George Dixon Primary School is located not far from Birmingham city centre and has an ethnically diverse pupil profile with over forty different languages spoken. At the time of the pilot (March 2007) the school had 260 pupils on its roll and provided 125 meals a day, an average take-up of 48%. The free school meal take-up was 80%. Cityserve Direct Services were keen to support the pilot at George Dixon Primary School.

At the time of the pilot, Cityserve Direct Services supplied school lunches to 298 of Birmingham's 305 primary schools. Cityserve operates a full management service level agreement (SLA) charged on an actual cost basis in each school, all of which have a delegated budget for school meals. As part of their management service, they develop, nutritionally analyse and cost the lunch menus centrally. In addition, they tailor support to individual schools by allowing them to 'tweak' the menus to accommodate the particular pupil profile. As part of their commitment to meeting the nutrient-based standards, they employ a freelance dietitian who is responsible for nutritionally analysing the central menus and providing nutritional advice. Cityserve had also developed

their own checklist to ensure that menus met the interim food-based standards for school lunches.

Action taken by the catering provider to

Promote school lunches: As well as working on this pilot with George Dixon Primary School, Cityserve had been promoting school lunches across the city using a variety of methods including posters, leaflets, advertising on buses, tree wraps, local radio and by placing public screens in libraries and hospitals.

Enhance the training and qualifications of the school

cooks: Cityserve were keen to support their school cooks and catering staff to ensure that they had the necessary skills to cook food from scratch, so they provided on-going training and support to achieve this. They allocated the Targeted School Meals Grant 5a to ensure all school cooks were trained to Level 2. They are currently working with three local catering colleges who offer the NVO for school cooks. Cityserve in partnership with Bournville College are a member of the School FEAST network. (See References and Resources for links to funding and training.)

Pilot Study

Working towards the nutrient-based standards using the whole school approach at George Dixon

Cityserve identified George Dixon Primary School as representative of Birmingham primary schools and in particular reflecting some of the key challenges of providing food to an ethnically diverse school population. The head teacher, Maria Carter, is very interested in healthy eating and has worked in partnership with the school cook, Ann Milligan, experimenting with ways to encourage pupils to try unfamiliar food. These include allocation of house points and stickers to pupils who try different food, as well as competitions and 'give aways'. To maintain a consistent message, all prizes are based on the healthy eating theme. For example, family tickets to visit the local organic centre or Vegetable Kingdom. The school also holds parents and pupil

tasting sessions, promotes meals at parent's evenings and open days, and sends information home including the lunch menu. The school has also developed ways for pupils with English as a second language to communicate their dietary needs using symbol cards, such as 'V' to help identify vegetarians.

Menu analysis: pre- and post-pilot

Cityserve operate a 4-week menu cycle which was adapted to 3-weeks for the purpose of the pilot. The pre-pilot 3-week menu cycle was analysed initially against the final food-based standards and then against the nutrient-based standards. This involved nutrient analysis of each recipe using Dietplan 6™ (nutrient analysis software). Nutrient data from each recipe was entered into Nutmeg™¹⁶ (menu planning and nutrient analysis software) together with any additional items including drinks and fruit, portion sizes, provision mix and the number of pupils eating school lunches over the 3-week menu cycle. The output from Nutmeg™¹⁶ (table and graph) was evaluated to identify whether the average school lunch met the nutrient-based standards. The majority of the recipes were those supplied by Cityserve. The nutrient analyses of the pre-pilot menu (based on estimates using previous sales data) and post-pilot menu (based on estimated sales mix) are presented on page 4.21. The post-pilot 3-week compliant menu cycle is shown on pages 4.23 to 4.25.





Evaluation of the pilot study

Final food-based standards

The pre-pilot menu already met the final food-based standards. Fruit is available to as many pupils who would like it. However the provision mix data shown on the menu is based on estimated provision mix.

Nutrient-based standards

The nutritional analysis of the pre-pilot menu identified that the nutrient-based standard for iron was not met and that zinc was only just compliant. George Dixon has a large Muslim population, and this means that beef (a good source of iron) is not included in the menu. Other meats such as chicken and lamb as well as vegetarian options (lower in iron) are more popular.

Modification of the menu

To ensure that the 3-week lunch menu met the nutrient-based standards, the freelance dietitian worked in partnership with Cityserve and the school to identify various ways that the menu could be modified within the budget constraints. The menu planning and nutrient analysis software identifies dishes on the current menu that are low in the nutrient and then suggests alternatives that could be substituted in order to achieve the nutrient-based standards. It was decided to increase the range of recipes containing lentils which are a relatively inexpensive source of iron. In addition the frequency of Quorn™ on the menu was also increased as this is a good source of zinc and a popular vegetarian option although there is a cost implication.

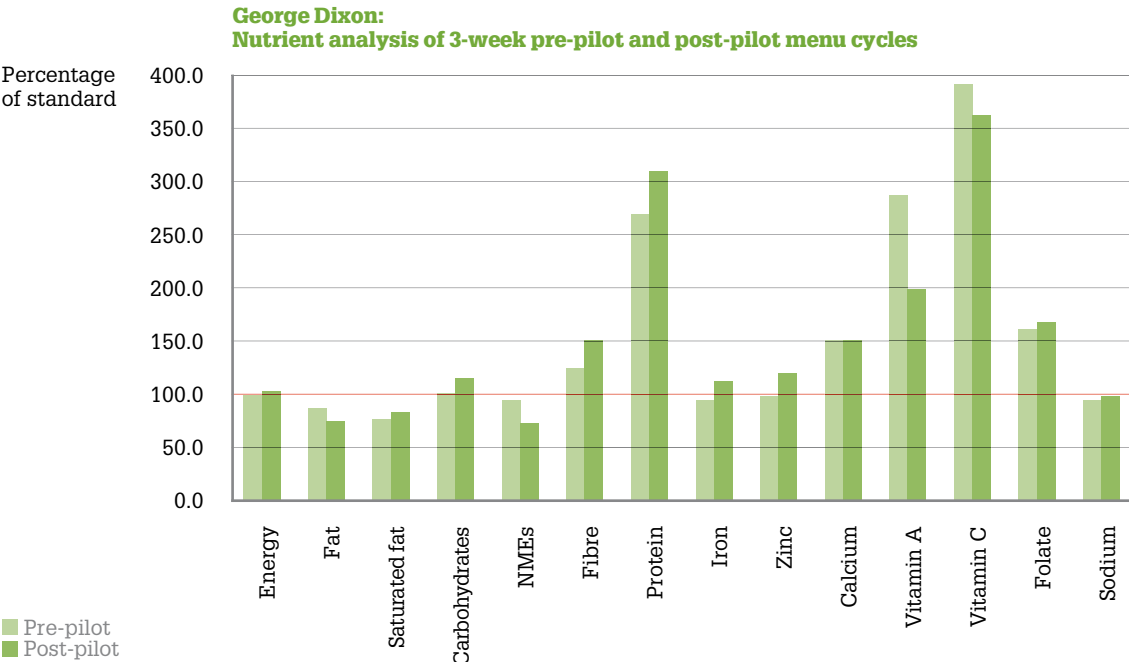
The modifications made to the menu are listed on the following pages. Birmingham City Council choose to operate a nut free policy* which restricts their options for menu modification.

*We recommend you visit www.allergyinschools.co.uk for accurate and reliable information on managing allergies in schools.

George Dixon: Modifications made to ensure the 3-week lunch menu met the final food-based and nutrient-based standards			
Week	Day	Menu changes	Reasons/Impacts
To increase iron and zinc content within a restricted budget			
1	Monday	Lamb spaghetti bolognaise: portion sizes of meat reviewed and increased	To increase iron and zinc content but need to consider potential increase in cost
1	Monday	Vegetable lasagne was replaced by lentil roast	Lentils are inexpensive and are a good source of iron and zinc
1	Tuesday	Lamb casserole recipe enhanced to include green peas	Green peas are a good source of zinc
1	Tuesday	Vegetarian shepherd's pie recipe enhanced to include black eye peas and more lentils. Cheese was also added to the mash.	Lentils and black-eye peas are an inexpensive and good source of iron. Cheesy mash made the dish more popular with pupils
1	Thursday	Boiled rice was replaced by curried rice salad	Curry powder adds flavour, is inexpensive and is a source of iron
1	Thursday	Cookie biscuit was replaced by date slice	Dates are a good source of iron and zinc
1	Friday	New recipe created for Quorn™ burgers	Quorn™ is a good source of zinc and is popular with pupils but can be expensive
1	Friday	Lamb chilli con carne: portion sizes of meat reviewed and increased	To increase iron and zinc content but need to consider potential increase in cost
2	Monday	Lamb shepherd's pie: portion sizes of meat reviewed and increased	To increase iron and zinc content but need to consider potential increase in cost
2	Wednesday	Tuna pasta bake was replaced by lentil chilladas	Lentils are inexpensive and are a good source of iron and zinc
2	Friday	Pasta and cheese bites were replaced by tomato pasta bake	To ensure saturated fat levels remained compliant
3	Tuesday	Salmon risotto replaced by Quorn™ risotto	Quorn™ is a good source of zinc and is popular with the pupils but can be expensive
3	Wednesday	Lamb curry: portion sizes of meat reviewed and increased	To increase iron and zinc content but need to consider potential increase in cost
To reduce non-extrinsic milk sugars (NME Sugars)			
2	Wednesday	Apple and banana crisp was replaced by cinnamon raisin bun	No impact
To enhance food-based standard for fruit was achieved			
1	Tuesday	Semi-skimmed milk was replaced by fruit juice	No impact
3	Tuesday	Carrot cake was replaced by fruit jelly	
3	Thursday	Orange sponge recipe was enhanced to include a portion of canned mandarins	
Other changes			
2	Thursday	Quorn™ and vegetable hotpot was replaced by Quorn™ bolognaise	Bolognaise is more popular with pupils.
3	Thursday	Quorn™ and vegetable pie was replaced by Quorn™ bolognaise made with vegetables	Bolognaise is more popular with pupils.
3	Wednesday	Rainbow salad was added as vegetable choice	Requested by pupils

George Dixon: Nutrient analysis of 3-week pre-pilot and post-pilot menu cycles							
Nutrient	Max/Min	%	Nutrient standard	Pre-pilot		Post-pilot	
				Nutrient	Standard met	Nutrient	Standard met
Energy (Kcals)	EAR*	30%	530±5%	526	✓	553	✓
Fat (g)	Max	35%	20.6	18.0	✓	16.2	✓
Saturated fat (g)	Max	11%	6.5	5.0	✓	5.5	✓
Carbohydrate (g)	Min	50%	70.6	72.3	✓	82.1	✓
NMES (g)	Max	11%	15.5	14.5	✓	11.4	✓
Fibre (g)	Min	30%	4.2	5.2	✓	6.4	✓
Protein (g)	Min	30%	7.5	20.3	✓	23.4	✓
Iron (mg)	Min	35%	3.0	2.9	✗	3.4	✓
Zinc (mg)	Min	35%	2.5	2.5	✓	3.0	✓
Calcium (mg)	Min	35%	193	290	✓	292	✓
Vitamin A (µg)	Min	35%	175	503	✓	347	✓
Vitamin C (mg)	Min	35%	10.5	41	✓	38	✓
Folate (µg)	Min	35%	53	85	✓	90	✓
Sodium (mg)	Max	30%	499	480	✓	495	✓

*Estimated Average Requirement





Implementation of the modified 3-week menu

The modified 3-week lunch menu was implemented using a whole school approach. The head teacher and school cook worked closely together to encourage pupils to try the new and enhanced dishes. They agreed a day when the pupils were to be given a sticker for trying a new dish. This method had been used successfully before. The pupils are not informed which day this will happen as this motivates the pupils to keep trying different food.

Evaluation of the modified 3-week menu

One round of modifications was needed to make the menu cycle compliant with the nutrient-based standards. There was no change in the take-up of school lunches over the 3-week menu cycle. Increasing the zinc and iron content of meals required increases in the portion sizes of some meat dishes and the use of Quorn, a good source of zinc. Meat and Quorn are relatively expensive ingredients. These changes resulted in a small increase in average ingredient costs.

The freelance dietitian's support time associated with nutritionally analysing the recipes was 15 hours. Recipe data entry into Nutmeg™¹⁶ took a member of the Cityserve team 16 hours 40 minutes. Menu planning and modification by a member of Cityserve with specialist catering knowledge took 11.5 hours.

Key challenges for the future

One of the big challenges in Birmingham is the transient nature of the school population. Birmingham is typical of many large urban multi-cultural cities, with a continually changing mix of cultural backgrounds. The catering provider has to respond by adapting the school food provision to reflect and respect the cultural and religious differences. The cook at George Dixon Primary School is currently researching Somali recipes to reflect the increased numbers of Somali pupils attending the school.

George Dixon Primary School 3-week compliant menu cycle

Week 1	Monday	Tuesday	Wednesday	Thursday	Friday
Meat, fish or dairy main course	Lamb spaghetti bolognaise (50)	Lamb casserole (50)	Homemade salmon fingers with homemade tomato sauce (55) Chicken tikka (25)	Sweet and sour chicken (55)	Lamb chilli con carne (40)
Vegetarian dishes	Lentil roast (40) Cheese and sweetcorn flan (25)	Vegetarian shepherd's pie (80)	Cheese whirls (50)	Chickpea and vegetable curry (70)	Tomato and vegetable pasta bake (20) Quorn™ burgers (20) Cheese and vegetable bakes (45)
Starchy food	Seasoned wedges (115)	Parsley potatoes (130)	Half jacket potato (130)	Curried rice (125) Naan bread (70)	Potato waffles (125)
Vegetables	Peas (38) Sweetcorn (38)	Macedoine vegetables (86)	Baked beans (43) Peas (43)		Baked beans (75) Sweetcorn (50)
Salad bar	Selection of salad (39)	Selection of salad (44)	Selection of salad (44)	Selection of salad (125)	Selection of salad (42)
Extra bread	Freshly baked bread available daily				
Dessert	Oaty fruit crumble and custard (100) Fresh fruit (9) Yoghurt (6)	Chocolate crunch and custard (100) Fruit juice (9) Fresh fruit and yoghurt (6)	Fruit wedges (130)	Date slice (90) Fruit juice (20) Fresh fruit and yoghurt (15)	Orange and lemon sponge and custard (100) Fresh fruit (10) Yoghurt (15)
Extra dessert options	Fresh fruit and yoghurt available every day				
Drinks	Semi-skimmed milk and free water available daily				

() indicates the estimated number of pupils taking each item

Week 2	Monday	Tuesday	Wednesday	Thursday	Friday
Meat, fish or dairy main course	Lamb shepherd's pie (55)	Chicken fillet and gravy (55)	Homemade pizza (100)	Roast lamb (60)	Lamb spaghetti bolognaise (65)
	Quiche (50)				Quiche (30)
Vegetarian dishes	Quorn™ sausage (25)	Chilli bean casserole (70)	Chilladas (25)	Quorn™ bolognaise (70)	Tomato pasta bake (30)
Starchy food	Sautéed potatoes (130)	Creamed potatoes (55)	Homemade granary bread (25)	Creamed potatoes (130)	Half a jacket potato (125)
		Boiled rice (70)			
Vegetables	Baked beans (43)	Mixed vegetables (84)		Cabbage (43)	Beans (42)
	Peas (43)			Carrots (43)	Sweetcorn (42)
Salad bar	Selection of salad (44)	Selection of salad (41)	Homemade coleslaw (84)	Selection of salad (41)	Selection of salad (41)
			Apple and sultana salad (5)		
Extra bread	Freshly baked bread available daily				
Dessert	Chocolate cracknel and custard (90)	Fresh fruit salad and glass of semi-skimmed milk (100)	Cinnamon raisin bun (100)	Chocolate cookie biscuit (90)	Flapjack with custard (100)
	Fresh fruit (15)		Fresh fruit and milk (15)	Fresh fruit and milk (15)	Fresh fruit and glass of semi-skimmed milk (10)
	Yoghurt (25)		Yoghurt (25)	Yoghurt (25)	Yoghurt (15)
Extra dessert options	Fresh fruit and yoghurt available every day				
Drinks	Semi-skimmed milk and free water available daily				

() indicates the estimated number of pupils taking each item

Week 3	Monday	Tuesday	Wednesday	Thursday	Friday
Meat, fish or dairy main course	Chicken curry ragout (55)	Lamb spaghetti bolognese (75)	Lamb curry (55)	Lamb roast (60)	Homemade french bread pizzas (130)
Vegetarian dishes	Vegetarian shepherd's pie (70)	Quorn™ risotto (50)	Vegetable and chick pea curry (75)	Quorn™ bolognese (70)	
Starchy food	Potato waffles (125)	Half a jacket potato (125)	Boiled rice (65)	Roast potatoes (60)	Seasoned wedges (130)
			Naan bread (65)		
Vegetables	Carrots (40)	Sweetcorn (125)		Cabbage (30)	Baked beans (130)
	Peas (42)			Carrots (30)	
Salad bar	Selection of salad (41)	Selection of salad (41)	Rainbow salad (130)	Selection of salad (44)	Selection of salad (44)
Extra bread	Freshly baked bread available daily				
Dessert	Chocolate crunch and custard (100)	Fruit jelly (100)	Fruit wedges and glass of semi-skimmed milk (100)	Orange sponge with mandarins & custard (100)	Apple and banana crisp and custard (100)
	Fresh fruit (10)	Fresh fruit and a glass of semi-skimmed milk (10)	Yoghurt (30)	Fresh fruit and glass of semi-skimmed milk (10)	Fresh fruit and glass of semi-skimmed milk (15)
	Yoghurt (15)	Yoghurt (15)		Yoghurt (15)	Yoghurt (15)
Extra dessert options	Fresh fruit and yoghurt available daily				
Drinks	Semi-skimmed milk and free water available daily				

() indicates the estimated number of pupils taking each item



Case study 2:

St Dunstan's Primary School, Surrey in partnership with Surrey County Council's catering provider (Surrey Commercial Services)



Context

Description of the school, pupils and lunchtime provision

St Dunstan's is a large primary school located in Woking, Surrey. At the time of the pilot (March 2007) the school had over 500 pupils and an average of 270 school lunches were served per day. School lunches at St Dunstan's are supplied by Surrey Commercial Services (SCS), who were keen to see the impact of the forthcoming nutrient-based standards on Surrey's school menus.

SCS provide in excess of 55,000 meals a day for schools and colleges throughout Surrey. They are a non-profit making department of the County Council with responsibility for school meal service provision encompassing menu planning, catering staff management and training. They were already nutritionally analysing their menus and agreed to support the pilot at St Dunstan's and to be actively involved in early discussions on menu modifications in order to check their practices.

SCS employ a Food Development Manager to design and develop menus, recipes and manage school food procurement. They also employ staff who have recipe development as part of their responsibilities, and work closely with the Food Development Manager to ensure that the innovative menus are also practical. SCS purchased

Saffron™¹⁶ menu planning and nutrient analysis software to assist them in verifying whether their food provision meets the nutrient-based standards. The Food Development Manager was responsible for entering recipes and portion sizes into the software program and acquiring nutrient information for the range of manufactured products incorporated into their menus. SCS have been building a comprehensive database of recipes and portion sizes over the last few years.

Action taken by the catering provider to

Promote school lunches:

- Menus are sent to every home.
- Parents are invited into school for lunch and after-school tasting events.

Enhance the training and qualifications of the school cooks:

SCS divide schools into locality clusters. When a new menu cycle is about to be introduced, the SCS trainers visit the catering staff in each cluster to ensure they are confident with the new menus. This allows the catering staff to make suggestions about what works, or changes needed to the menu according to resources and other considerations. The training includes portion control, presentation, managing resources or trying out new recipes or methods.



Pilot Study

Working towards the nutrient-based standards using the whole school approach

SCS selected St Dunstan's primary school as representative of Surrey primary schools. Communication was deemed vital to the success of the pilot so at the outset a meeting was set up with the school catering staff including the catering supervisor, cook, three school catering assistants, two groups of pupils, the teaching staff including the head teacher and a group of parents. At the meeting the reason for the introduction of new school food standards was explained and the main aims and objectives of the pilot were outlined. During the meeting the pupils were asked to share their views on healthy eating, their favourite meals/dishes, and generally what they thought about their school lunches.

SCS use 3-week menu cycles and at the time of the pilot the menu had already been served, so the pupils, parents and staff were familiar with the food provision. It was important to ensure that any changes made to the menu were agreed with the pupils and parents.

Menu analysis: pre and post-pilot

The lunchtime meal provision at St Dunstan's includes:

- freshly made bread
- jugs of water freely available
- fresh fruit and vegetables displayed on the food counter to encourage pupils to choose fruit and vegetables
- salad bar provision.

The pre-pilot 3-week lunch menu was checked to ensure that it met the final food-based standards and it was then nutritionally analysed. This involved entering recipes, all additional items including drinks and fruit, portion sizes and provision mix into the software, and evaluating the table and graphical output to identify if the average school lunch met the nutrient-based standards. All recipes used at St Dunstan's were supplied by SCS. The nutrient analyses of the pre-pilot and post-pilot menu cycles are presented on page 4.30. The post-pilot 3-week compliant menu is shown on pages 4.32–33.

Evaluation of the pilot study

Final food-based standards

The pre-pilot menu already met the final food-based standards. Fruit is available to as many pupils as would like it.

Nutrient-based standards

Nutrient analysis of the pre-pilot 3-week menu suggested that the average school lunch was slightly too high in energy, saturated fat, non-milk extrinsic sugars and sodium.

Modification of the menu

To ensure that the menu met the nutrient-based standards and remained practical, the Food Development Manager worked in partnership with the school identifying various ways that the menu could be modified within the budget constraints. Using the software, food items that are high or low in particular nutrients are easily identified and substituted in order to achieve the nutrient-based standards. The modifications made to the menu are listed on the following page.



St. Dunstan's: Modifications made to ensure the 3-week cycle menu met the final food-based and nutrient-based standards

Week	Day	Menu changes	Reasons/Impacts
To decrease saturated fat			
Throughout 3-week menu cycle		Type of fat used changed to polyunsaturated fat in all recipes.	This worked well for sauces and sponges. However, it was more difficult, but still possible, to make pastry.
To reduce non-extrinsic milk sugars (NMES)			
3	Wednesday	Butterscotch tart replaced with fresh fruit salad.	The pupils missed the popular butterscotch tart but no other impact reported
To reduce sodium			
Throughout 3-week menu cycle		Reviewed recipes to reduce the amount of salt used during cooking replacing it with herbs and spices	Pupils did not notice the change
To enhance the provision of fruit			
1 2 3	Mon, Fri Wed, Fri Tue, Wed, Fri	More fruit options (fresh fruit or fruit juice) were added to the menu.	To encourage fruit consumption. Providing more fresh fruit was a challenge in terms of waste and preparation time. To balance this it was agreed to offer fruit portions some days and fruit juice other days.
To maintain compliance with deep-fried food standard (following other menu changes)			
3	Monday	Cheesy vegetable fingers were moved from Week 1 – Wednesday to Week 3 – Monday	No impact
To maintain take-up (following other menu changes)			
3	Wednesday	Chocolate sponge and chocolate sauce, a popular dessert, was placed on the same day that oily fish, a less popular dish, was provided.	Take-up was maintained – the catering staff have found that serving the pupils's favourite dessert on the same day as a less popular main dish limited the impact on take-up of school lunches

St. Dunstan's: Nutrient analysis of 3-week pre-pilot and post-pilot menu cycles

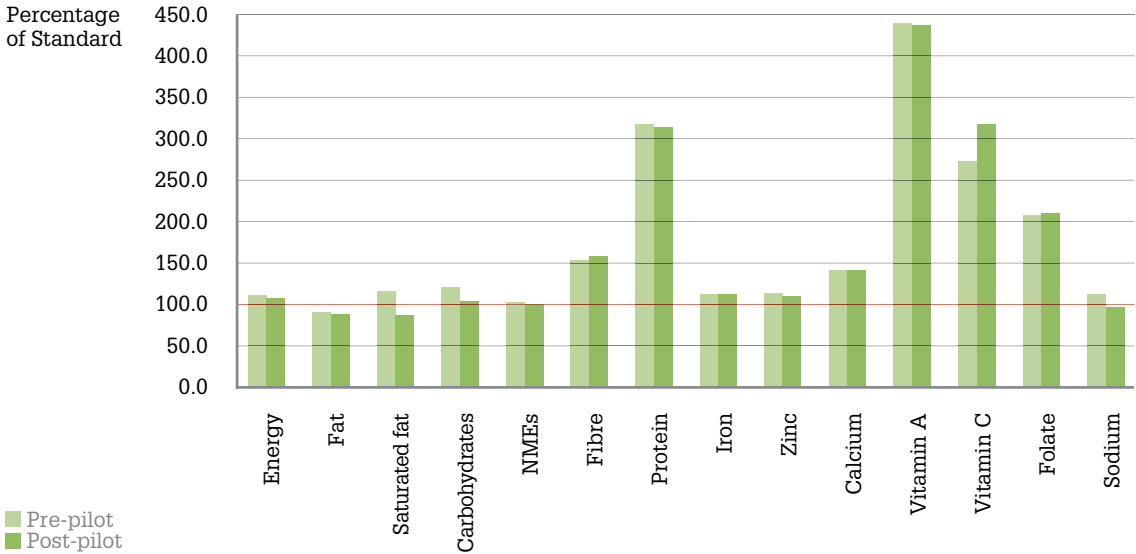
Nutrient	Max/Min	%	Nutrient standard	Pre-pilot		Post-pilot	
				Nutrient	Standard met	Nutrient	Standard met
Energy (Kcals)	EAR*	30%	530±5%	577	✗	556	✓
Fat (g)	Max	35%	20.6	18.4	✓	17.7	✓
Saturated fat (g)	Max	11%	6.5	7.4	✗	5.5	✓
Carbohydrate (g)	Min	50%	70.6	83.8	✓	84.4	✓
NMES (g)	Max	11%	15.5	15.7	✗	15.4	✓
Fibre (g)	Min	30%	4.2	6.4	✓	6.6	✓
Protein (g)	Min	30%	7.5	23.6	✓	23.5	✓
Iron (mg)	Min	35%	3.0	3.3	✓	3.3	✓
Zinc (mg)	Min	35%	2.5	2.8	✓	2.7	✓
Calcium (mg)	Min	35%	193	268	✓	269	✓
Vitamin A (µg)	Min	35%	175	766	✓	762	✓
Vitamin C (mg)	Min	35%	10.5	28.3	✓	33.2	✓
Folate (µg)	Min	35%	53	109	✓	110	✓
Sodium (mg)	Max	30%	499	560	✗	474	✓

* Estimated Average Requirement

Note: the extra bread was included in the nutrient analysis of the pre-pilot menu which had an impact on the energy and sodium values. The 2007 Regulations state that the additional bread available to pupils at lunchtimes should not be included in nutrient analysis of the lunchtime provision.

Note: the pilot took place during the final drafting of the school food regulations. During this period the nutrient-based standards changed. Energy was reduced which directly affected the minimal values for carbohydrate, protein and fibre and maximum values for fat, saturated fat and NMEs. In addition the maximum figure for sodium was lowered. The rationale for these changes can be found in the Technical notes section. These changes meant that the 3-week menu cycle that complied with the original nutrient values was no longer compliant.

St. Dunstan's:
Nutrient analysis of 3-week pre-pilot and post-pilot menu cycles





Evaluation of the modified 3-week menu

One round of modifications was needed to make the menu cycle compliant with the nutrient-based standards. There was no change in the take-up of school lunches over the 3-week period. A key issue when balancing the menus was to increase the availability of fruit, a relatively expensive ingredient. SCS did consequently report a small increase in average ingredient costs. The Food Development Manager estimated that the time it took to analyse and modify the 3-week menu cycle was 20 hours. This excludes the time associated with the pre-pilot initial menu planning, initial data entry of the recipes, portion sizes and sales mix. This also excluded the original outlay on the menu planning and nutrient-analysis software which was estimated to cost SCS £20,000, equivalent to an initial investment of £50 per school. This cost includes training and data migration. There is an additional annual maintenance charge of £5,000. All costs exclude VAT.

Key to success/good practice

- Meetings with pupils and parents were arranged to gather their views on the meals provided. Many pupils and parents were not aware of the new regulations relating to school food so these meetings provided a good opportunity to explain them.
- Pupils at the school were given opportunities to share their opinions on school lunches and what it meant to them to have a healthy diet.
- SCS run regular training sessions for clusters of school cooks and St Dunstan's is one of their training hubs. These sessions are valuable opportunities for Surrey school cooks to share ideas and to network.

Key challenges for the future

SCS use a small number of manufactured products and for many of these, full nutrient information is not available. In these cases, the Food Development Manager used nutrient information for an equivalent food to ensure that the nutrient profile of the 3-week menu was complete. When SCS contacted manufacturers, full nutrient analysis had not yet been undertaken. This is expected to change with the demand to meet the new requirements.

St Dunstan's Primary School

3-week compliant menu cycle

Week 1	Monday	Tuesday	Wednesday	Thursday	Friday
Main course	Organic meatballs with gravy	Mediterranean chicken pasta	Oven baked fish fingers	Roast chicken breast with stuffing and gravy	Filled jacket potato with savoury mince
Vegetarian alternative	Vegetarian ravioli	Cauliflower cheese	Cheese and vegetable bake	Macaroni cheese	Mediterranean pasta
	Wholegrain rice	Freshly baked garlic bread	Low fat chips	Roast potatoes	Freshly baked onion bread
Accompaniments	Crudités and a wedge of freshly baked bread available daily, jugs of water				
Vegetables	Green beans Sweetcorn	Fresh carrot batons Broccoli	Baked beans Peas	Fresh savoy cabbage Farmhouse vegetables	Sweetcorn carrot and lemon salad
Dessert	Fruits of the forest muffin and milk fruit salad	Peaches and custard	Oaty apple and peach crumble	Fruit salad	Frozen yoghurt fruit salad
Additional dessert options	Fresh fruit and fruit yoghurt				

Week 2	Monday	Tuesday	Wednesday	Thursday	Friday
Main course	Spaghetti bolognaise	Oven baked fish and parsley sauce	Organic beefburger	Roast loin of pork with apple sauce and gravy	Chicken casserole and dumplings
Vegetarian alternative	Lentil lasagne	Dutch ploughman's platter with edam	Egg and cheese quiche	Cheesy leek pasta bake	Filled jacket potato with roasted vegetables
	Freshly baked bread	Boiled potatoes	Oven baked jacket wedges	Fresh roast potatoes	
Accompaniments	Crudités and a wedge of freshly baked bread available daily, jugs of water				
Vegetables	Roasted vegetables	Peas Sweetcorn	Baked beans Coleslaw	Broccoli Cauliflower	Fresh savoy cabbage Carrot & swede batons
Dessert	Steamed fruit sponge and custard	Oatflake shortbread and fruit smoothie	Fresh fruit salad	Rhubarb and apple crumble and custard	Fruit yoghurt Fruit salad
Additional dessert options	Fresh fruit and fruit yoghurt				

Week 3	Monday	Tuesday	Wednesday	Thursday	Friday
Main course	Organic sausages and gravy	Baked gammon with gravy	Fresh salmon & pasta in a watercress sauce	Chicken risotto	Freshly baked margarita pizza
Vegetarian alternative	Cheesy vegetables fingers	Spanish omelette	Filled jacket potato with coleslaw and baked beans	Oriental vegetables with noodles	Haddock and tuna fishcakes
	Fresh mashed potato	Fresh roast potatoes	Freshly baked bread		Jacket potato
Accompaniments	Crudités and a wedge of freshly baked bread available daily, jugs of water				
Vegetables	Baked beans Peas	Fresh carrot slices Savoy cabbage	Fresh broccoli Baked tomato	Green beans Sweetcorn	Peas Coleslaw
Dessert	Apple and sultana bun and milk	Rice pudding with sultanas Fruit salad	Chocolate sponge and chocolate sauce Fruit salad	Pineapple upside down pudding with vanilla sauce	Jelly and ice cream Fruit salad
Additional dessert options	Fresh fruit and fruit yoghurt				



Case study 3:

Sunnymede Primary School, Essex



Context

Description of the school, pupils and lunchtime provision

Sunnymede Junior School is in Billericay, Essex and has 300 pupils, with about 130 pupils taking school lunches. Only two pupils require a vegetarian option. In November 2006, Sunnymede's catering provider ceased operating in the area, so the school decided to move their catering provision in-house. The menus are planned in partnership with the school cooks who are responsible for preparing the food from scratch. The school catering staff were well trained by the previous catering company, and the school continued this training. Initially the school replaced the 3-week menu cycles with a 2-week menu cycle allowing the removal of the least popular dishes.

Action taken by the school cooks to

Promote school lunches: A challenge in all schools is how to increase the take-up of school lunches and protect the viability of the catering service. At Sunnymede the dining room is made as pleasant as possible, for example tables are covered with plastic cloths illustrated with fresh vegetables and food is served on plates instead of 'airline' trays. The school also held a competition to name the dining room.

Involving pupils has also improved the overall dining room experience. At Sunnymede, pupils help out with various tasks in the dining room during the lunchtime service. For example, a team of two manage the used plate, tray and cutlery section and another team cut up food for the younger pupils.

Cooks also take around "tasters" to pupils eating packed lunches and send parents relevant information about the menus.

Enhance the training and qualifications of the school cooks:

The cooks have Level 1 Health and Hygiene qualifications, Level 2 Healthier Food and Special Diets and Certificates in Food Safety qualifications.



Pilot Study

Working towards the nutrient-based standards using the whole school approach

The head teacher, Karen Cooke, was very keen to be involved in the pilot and invited the School Council, made up of two representatives from each class, to a focus group discussion about healthy eating and the current school lunch menus. The School Council discussed what they liked about their school lunch, whether they had noticed any changes in the lunch provision since it had been operating in-house, and their ideal school meal. Approximately 15 pupils took part in the discussion and the session was chaired by one of the pupils.

The pupils' responses included:

- they liked the trays and plates instead of 'airline' trays
- they had noticed that the food was healthier and tastier
- their favourite food was jacket potato and baked beans
- ideal school lunches included dishes such as chicken curry and spaghetti bolognese
- they had noticed that there was more salad
- the hot desserts were now served hot whereas before they used to get cold
- they liked the homemade bread.

The cooks at Sunnymede operate a 2-week menu. The daily lunch provision on offer includes:

- freshly made bread
- jugs of water freely available
- salad bar provision.

In preparation for implementing the nutrient-based standards, Sunnymede purchased Nutmeg™¹⁶ menu planning and nutrient analysis software. Rather than nutritionally analysing their own recipes and entering the data into the software, they decided to select similar recipes from the software recipe databank, to save time and money. The revised 2-week menu was checked for compliance against the final food-based standards and was then analysed against the nutrient-based standards. This involved selecting the recipes and entering all additional items including drinks and fruit, portion sizes and provision mix into the software.

A school meals advisor from Essex County Council supported Sunnymede by helping with data entry, menu planning, analysis and modification.

Evaluation of the pilot study

Final food-based standards

The pre-pilot menu already met the final food-based standards.

Nutrient-based standards

Nutrient analysis of the pre-pilot 2-week menu suggested that the average school lunch at Sunnymede was slightly too low in energy, carbohydrate and calcium.

Modification of the menu

Providing in-house catering requires considerable input to ensure that staff, resources and equipment are adequate. The school has to decide who should take the lead in menu planning, budget control, procurement and troubleshooting.

During the consultation before the menu was modified, the school cooks highlighted the need for careful planning to ensure that any revisions made to the menu reflected staff skills, training and equipment availability. The cooks had highlighted that on some days the workload was much heavier than on other days because the food preparation took longer. It was also important to integrate food delivery times with the menu, for example, by using products with short preparation times on Mondays. Cooks were also involved in decisions about where to best source ingredients. The school buys most of its food items from local suppliers.

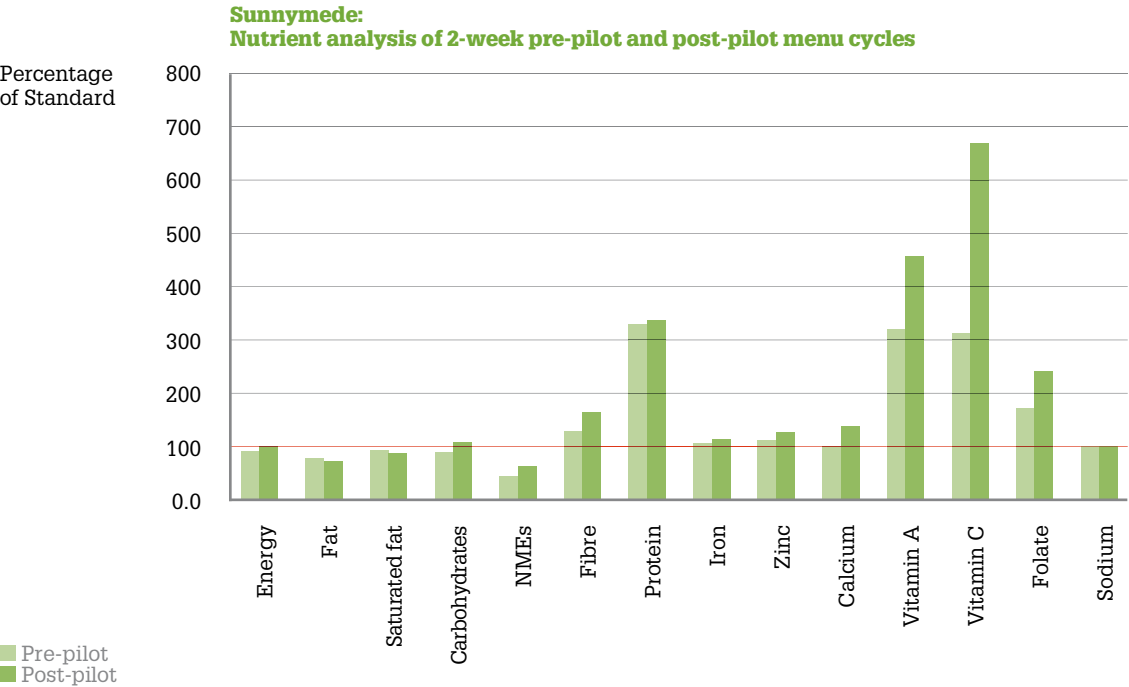
To ensure that the menu met the nutrient-based standards and incorporated the views of the School Council, the school cooks decided to increase the pasta and potato portion sizes over both weeks, and food containing calcium such as yoghurt and cheese were added to the menu. The modifications made to the menu are shown on the following page.



Sunnymede: Modifications made to ensure the 2-week menu cycle met the final food-based and nutrient-based standards			
Week	Day	Menu changes	Reasons/Impacts
To increase carbohydrate			
Throughout 2-week menu cycle		Pasta and potato portion sizes increased slightly in all recipes throughout 2-week menu cycle	Pasta and potatoes are good sources of carbohydrates.
To increase calcium			
1 2	Wednesday Monday	Yoghurt added	Yoghurt is a good source of calcium
2	Monday Friday	Cheese options added as part of the salad bar	Cheese is a good source of calcium
To reduce preparation time			
2	Wednesday	Roast chicken replaced with roast beef	Beef easier to carve than chicken and looked more appetising to eat
2	Wednesday	Apple pie replaced with apple cinnamon crumble	Crumble quicker to prepare than pastry
2	Thursday	Bakewell tart replaced with pear sponge	Pear sponge quicker to prepare than bakewell tart
Throughout 2-week menu cycle		Only one or two pupils required vegetarian dishes so small quantities were prepared and frozen in individual portions.	
Other changes			
1	Monday	Salmon fish cakes replaced with salmon mayonnaise (served with jacket potato)	Pupils requested this change
2	Friday	Potato wedges replaced with jacket potatoes	Pupils requested this change

Sunnymede: Nutrient analysis of 2-week pre-pilot and post-pilot menu cycles							
Nutrient	Max. /Min.	%	Nutrient standard	Pre-pilot		Post-pilot	
				Nutrient	Standard met	Nutrient	Standard met
Energy (Kcals)	EAR*	30%	530±5%	462	✗	513	✓
Fat (g)	Max	35%	20.6	15.4	✓	14.6	✓
Saturated fat (g)	Max	11%	6.5	5.8	✓	5.4	✓
Carbohydrate (g)	Min	50%	70.6	60	✗	74.6	✓
NMES (g)	Max	11%	15.5	6.3	✓	9.4	✓
Fibre (g)	Min	30%	4.2	5.3	✓	6.8	✓
Protein (g)	Min	30%	7.5	24.5	✓	25.1	✓
Iron (mg)	Min	35%	3.0	3.1	✓	3.3	✓
Zinc (mg)	Min	35%	2.5	2.7	✓	3.1	✓
Calcium (mg)	Min	35%	193	190	✗	260	✓
Vitamin A (µg)	Min	35%	175	555	✓	793	✓
Vitamin C (mg)	Min	35%	10.5	32.5	✓	70	✓
Folate (µg)	Min	35%	53	90	✓	125	✓
Sodium (mg)	Max	30%	499	498	✓	497	✓

* Estimated Average Requirement



Evaluation of the modified 2-week menu

One round of modifications was needed to make the menu cycle compliant with the nutrient-based standards. There was no change in the take-up of school lunches over the 2-week menu cycle. The head reported that the changes made increased the cost slightly. The estimated cost of the time it took to analyse and modify the 2-week menu was five days. The cost of menu planning and nutrient analysis software package to the school was £350+VAT and £175 per year maintenance charge to cover technical support and online advice.

Key to success/good practice

- Involving the school council.
- Involving pupils in the dining room.
- Involving cooks in decision making.

Key challenges for the future

The main challenge at this school is maintaining the take-up of school lunches to ensure viability of the service. Locally the birth rate is falling, impacting on the numbers of pupils on the school roll which subsequently impacts on take-up. Karen Cooke said that one creative solution that had been successful was 'French Friday'. The menu was translated into French and take-up increased significantly.



Sunnymede Primary School

2-week compliant menu cycle

Week 1	Monday	Tuesday	Wednesday	Thursday	Friday
Main Course	Jacket potato with salmon mayonnaise	Cottage pie	Turkey breast onion gravy	Beef lasagne	Chicken casserole
Vegetarian alternative	Jacket potato with cheddar cheese	Vegetarian cottage pie	Cheese wheels	Vegetable risotto	Vegetable curry
Starchy food	Jacket potato as above	Mashed potato	Roast potatoes	Bread	Rice
Accompaniments	Salad bar and freshly baked bread available daily				
Vegetables	Baked beans	Carrots sweetcorn	Medley of mixed vegetables	Carrots Peas	Broccoli
Dessert	Fresh fruit salad pineapple upside-down pudding Custard	Fresh fruit salad Homemade shortbread biscuits	Seasonal fruit salad & natural yoghurt	Fruit salad Ice cream	Chocolate fudge pudding Custard Fresh fruit salad
Drinks	Jugs of water served daily				

Week 2	Monday	Tuesday	Wednesday	Thursday	Friday
Main Course	Spaghetti bolognaise	Sausages gravy (lower salt)	Roast beef onion gravy	Mild chicken curry	Breaded chicken goujons Homemade tomato sauce
Vegetarian alternative	Vegetable bolognaise	Bean goulash	Vegetable medley	Vegetable crumble	Cheese wheels
Starchy food	Pasta as above	Mashed potatoes	Roast potatoes	Rice	Jacket potato
Accompaniments	Salad bar and freshly baked bread available daily				
Vegetables	Broccoli Sweetcorn	Cauliflower	Medley of mixed vegetables	Carrots Green beans	Peas Sweetcorn
Dessert	Fresh fruit salad Raspberry yoghurt sponge custard	Fresh fruit salad Rice pudding	Seasonal fruit salad & Apple cinnamon crumble	Pear sponge Custard Fruit salad	Fresh fruit salad Natural yoghurt
Drinks	Jugs of water served daily				

Case studies: Secondary Schools

To help secondary and special schools to meet the final food-based and nutrient-based standards for school lunches, the School Food Trust has been working with secondary schools around England. These 'pilot' schools are working closely with the Trust using the whole school approach to make changes in their school food provision in order to meet the nutrient-based standards ahead of the September 2009 mandatory deadline. Engaging with key stakeholders including pupils, parents, head teachers, school cooks, catering providers and lunchtime supervisors, is key to implementing the standards.

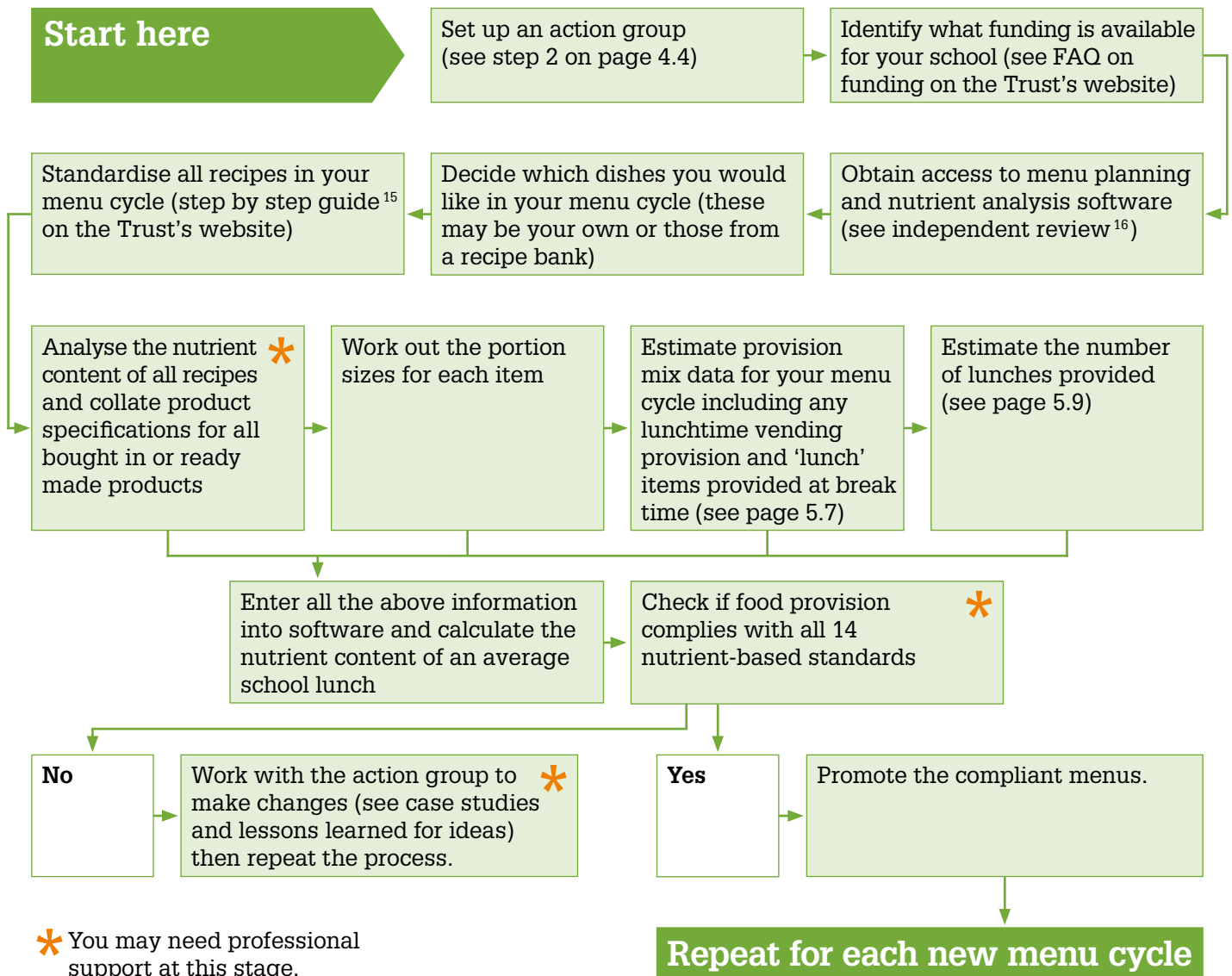
The School Food Trust would like to thank all those involved in the pilots for volunteering their time, invaluable experience, and commitment to the healthy eating agenda. Their valued support has allowed the development of case studies that will be beneficial to other schools embarking on the same journey.

The next section contains the most important lessons learned from the pilots. This is followed by details of how three of the pilot secondary schools – Royal Docks Community School, Windlestone Residential Special School and Heathside School – successfully worked towards and became compliant with the final food-based and nutrient-based standards. Further case studies will be published on the School Food Trust website.



Getting started

Start working towards the nutrient-based standards now because as our pilots show, this will take time. Secondary school lunch provision is complex because there is usually a range of choice, a variety of outlets and different serving times. Follow the process in the flow chart below (which elaborates on Step 3 as outlined on pages 4.8/4.9) as you work towards implementing the standards.



Lessons learned



It is important to respect your customer. Ask the student council or SNAG to canvass opinions to gain insight into their issues around the school lunch provision.

Applying a whole school approach

Setting up a healthy eating action group: The formation of an action group has been a key element in the successful implementation of the nutrient-based standards in the pilots. When setting up a school nutrition action group (SNAG) follow the guidelines given on page 4.4. For the group to be most effective we would recommend that you include all stakeholders listed.

Another key factor in achieving success is having a 'champion'. This can be an individual or a team that will coordinate and motivate the action group and instigate the changes required. It is important that whoever is the lead has the support of key decision makers.

Explain the rationale: Use clear simple messages to explain to students and staff why the nutrient-based standards for school lunches are necessary. Use the information in this guide to explain why the body requires specific nutrients such as iron and calcium, and use the British Seasonal Food Chart¹⁷ to identify which fruits and vegetables are good sources of particular nutrients. Display the Food Standards Agency (FSA) 'Eatwell' plate¹⁸ in the dining room as a visual tool to illustrate the types and proportions of foods that make up a healthy balanced diet.

Phased change: Acknowledge from the outset that it may take time to implement the changes required to develop menus compliant with the standards. This will be dependent upon how far your school has implemented healthy eating. Set a date by which the change should be achieved.

Consultation: Hold regular meetings with your action group to discuss how to modify the lunch menu to meet the standards. It is important to respect your customer. Ask the student council or SNAG to canvass opinions to gain insight into their issues around the school lunch provision.

Communication with the wider school community: Use different ways to communicate why and how school food is changing, for example by promoting healthy eating messages through assemblies, school radio, message board, emails and "Thought for the Week". Display lunch menus in the dining room, classrooms, on the school website and in the school newsletter. Highlight any promotions or theme days. Spend time and effort marketing new food items and menu changes.



It is important to promote consistent messages around healthy eating across the curriculum.

Involving parents and carers:

For any change to be successful it is important that parents/carers are informed and actively involved. If you are modifying or changing your lunch menus, engage with parents/carers and get their support for the changes, particularly if the cost of meals is likely to increase. For example, hold taster sessions during parents' evenings or open days and invite parents/carers in to have a school meal.

Curriculum links: It is important to promote consistent messages around healthy eating across the curriculum. At Royal Docks Community School, the food technology students were involved in designing healthy sandwiches. At Heathside School, the media students were involved in marketing the school lunch. At Windlestone School, every student receives information on healthy eating during PSHE lessons. For more information on how to integrate healthy eating messages into the curriculum download the 'My food – Guidance for schools on healthy eating' document from **www.healthyschools.gov.uk** Ideas on how to link the classroom activities with your canteen can be found in the

'What's going down' curriculum pack, accessed through the Trust's Million Meals website **www.schoolfoodtrust.org.uk/millionmeals**

Aligning to other programmes:

Meeting the standards is an integral part of becoming a Healthy School and relates to other issues such as efficient and sustainable procurement. Make sure that you consider the agendas of other key stakeholders when making changes to your provision. For example, try to make sure that all packaging is biodegradable or recyclable.

Addressing issues around the delivery of the lunch service:

Tackling issues other than the provision of food is fundamental to success. Many of the discussions in the pilots with the students and cooks were about non-food issues. The main challenges were lack of space in the dining room, long queues and lack of water fountains. Use the School Food Trust's guide 'A fresh look at the school meal experience' to see how to make simple, inexpensive changes to improve the dining room experience.

Providing incentives and reducing competition: Viability of the school lunch service can be improved by marketing and promotion. Carefully operated incentive schemes can be used to encourage students to make healthy choices through collecting points for prizes. We would recommend choosing prizes that also promote a healthy lifestyle, for example leisure vouchers and sports equipment but alternative rewards such as phone top-up

vouchers have been well received. Consider developing a 'stay-on-site' policy so that students cannot be tempted by junk food meal deals from surrounding outlets. Guidance on developing a stay-on-site policy can be accessed through the Trust's Million Meals website www.schoolfoodtrust.org.uk/millionmeals. Use meal deals to promote economical and healthy food choices.





Tried and tested, healthy and cost-controlled recipes that students enjoy eating are the foundation of a good school meal service.

Nutritional analysis of recipes and menus requires time, money and expertise

Set-up a project team: We would recommend that you set up a project team to input the standardised recipes and product specifications into the software. This requires IT skills, catering knowledge and nutrition expertise. We would recommend that the caterer has ongoing support from a qualified dietitian or nutritionist with relevant experience. Although there will be a cost attributed to the running of this team, this has proved to be a worthwhile investment and will save time in the long term.

Use standardised recipes:

Tried and tested, healthy and cost-controlled recipes that students enjoy eating are the foundation of a good school meal service.

Standardised recipes allow the caterer to produce portion controlled recipes of a consistent quality, facilitating stock control and budget management. For more information on how to standardise recipes, see our step-by-step guide¹⁵.

Standardised recipes can support creativity and innovation in school catering – cooks should be encouraged to modify recipes as necessary in consultation with students. We would recommend an ongoing process of recipe development, taste testing and nutrient analysis.

Nutritional analysis of standardised recipes:

Each recipe may take 30 minutes to nutritionally analyse. The process of analysing recipes can be approached manually but has been made easier by the use of computerised food composition tables which are available in a range of software programmes. These software programmes are helpful tools, as long as the nutrient data they contain is up-to-date and reflects ongoing product development and re-formulation of existing foods.

Use the software recipe

databank: Many of the menu planning and nutrient analysis software programmes contain standardised school lunch recipes, which have already been nutritionally analysed. If you can use some of these recipes, this will save you having to analyse your own.



Expertise: We would recommend that you consider using professional support to ensure the results of the nutrient analysis are consistent and reliable. Recipe analysis (with or without the use of software) requires some expertise and nutritional knowledge and should be undertaken by a trained and experienced person. This could be a dietitian or nutritionist, or someone who has been trained to use the menu planning and nutrient analysis software. For ways to find professional support see page 7.5.

Cooks' forum: Consider setting up a group who can share standardised recipes (that have been nutritionally analysed and costed) between schools. You could also share compliant menus.

Funding: The School Lunch Grant (2008–2011)¹⁹ can be used to pay for nutrient analysis software or for the professional support required to use the software. Alternatively you could approach your local authority or catering provider for support, or set up a consortium.

Estimating provision mix

Centralised menus: Remember that you can compute the average school lunch for a group of schools which have similar demographic profiles, menus and provision mix. One approach to accurately estimate the provision mix for a group of schools is to use information gathered from production sheets.

How to capture mid-morning break and vending: If food and drink provided at mid-morning break or in vending machines is considered to be part of lunchtime provision, you will need to estimate what proportion of this should be included in the nutrient analysis. For example, if pupils attending extra-curricular activities at lunchtime obtain their lunch at mid-morning break to eat later, this should be included in the lunchtime provision mix.

Meeting the nutrient-based standards

The pre-pilot menus in the pilot schools varied in their level of compliance with the nutrient-based standards – some were high in energy, fat, saturated fat, NME sugars or sodium; others were low in micronutrients such as iron and calcium. Although each school experienced different nutritional challenges, the approaches used to meet the nutrient-based standards were similar, involving recipe/product modification, recipe/product substitution and revision of portion sizes and provision mix.

Recipe modification: Recipe modification involves changing the amounts or types of ingredients. When modifying a recipe ask three questions:

- Can an ingredient be left out?
- Can the amount of an ingredient be increased/decreased?
- Can a substitute be used?

Each ingredient in a recipe has a specific function. Remember that substituting one ingredient for another may alter the taste, colour, moisture content or texture of the dish. It is always important to consider this, otherwise the taste and texture of a tried and tested recipe may no longer be popular with students. In many cases, ingredients can be reduced without compromising the flavour of the food. Remember that adjusting a recipe is an experimental process. Always test the modified recipe until you have a consistent result, and trial samples with students using taster sessions.

For the greatest impact on the overall nutrient content of the lunch provision, focus on modifying the nutritional content of popular dishes.

Update your menu if dishes have changed substantially, to accurately reflect the ingredients so that students know what they are selecting.

Involve students in recipe modification by giving them the basic recipe and asking them to modify it to include more or less of a particular nutrient. For example, in food technology classes give students a bag of ingredients high in iron and calcium and ask them to adapt a recipe to include at least two of these ingredients.

It would be helpful to share successful modified recipes with other cooks. Don't forget to share the costing and nutritional information too.

Product development:

Manufacturers are continually developing and reformulating their products to meet the nutritional targets. This product development takes time and it is happening in the school food market. Ask for products that meet the FSA voluntary Target Nutrient Specifications⁸.

Please note the FSA's new salt targets for 2010²⁰ mean that many products are currently being reformulated. Ask the manufacturer for an up-to-date product specification and use this in your analysis.





Meal deals were popular with the students and encouraged them to take a balanced meal which contributed to compliance with the standards.

Recipe or product substitution:

If you decide to replace a recipe, ensure that the new recipe is standardised and that you have updated your nutrient analysis.

Revising portion sizes: Portion sizes may be revised where appropriate to modify the nutrient profile of your menu cycle. It is important, however, that these changes are made according to balanced diet principles.

Revising provision mix:

Changing the provision mix can also help to achieve compliance with the standards. However, you will need to use marketing and promotions to encourage students to select items in line with the revised provision mix.

Meal deals: Meal deals can offer value for money by providing a meal for a competitive set price. At Royal Docks Community School, students were finding it difficult to self select from a multi choice, individually priced menu and also to restrict their selection to the price of their free meal entitlement. Meal deals were popular with the students and encouraged them to take a balanced meal which contributed to compliance with the standards. Meal deals also helped to speed up the service.

Tips for creating meal deals

- Allow the school caterer and students to work together to create nutritious meal deals that will be popular.
- Include a salad or hot vegetable and a fruit-based dessert or fresh fruit in the meal deal price and actively promote this to all students to ensure that the lunch provision is compliant with the food-based standards for fruit and vegetables and take up of these foods is maximised.
- Ensure that cold meal deals are as nutrient dense as the hot option. For example, you may need to include three or four items such as a sandwich/wrap with a protein filling, a portion of vegetables, a fruit-based dessert and a dairy-based drink.
- Endeavour to price all meal deals to the equivalent of a free school meal to promote equality and remove stigma.
- Include premium products (e.g. smoothies) to make the meal deal more desirable.
- Actively promote and market your meal deals.

Key tips



How to develop a menu cycle that is compliant with the nutrient-based standards

For further information on food items that are a source of each nutrient please refer to pages 3.7–3.19.

Not compliant	Possible solutions
High in energy	Reduce portion sizes if appropriate.
	Reduce the frequency of food items high in fat and sugar such as cakes and biscuits. Include and promote alternative desserts such as fresh fruit.
Low in energy	Increase portion sizes if appropriate.
	Focus on increasing the portion sizes of plain starchy foods such as boiled rice, pasta, potatoes, bread rolls or wraps.
High in fat	Check the portion sizes of foods high in fat, such as deep fried items, or baked potato fillings such as cheese or tuna mayonnaise.
	If you are using beef or lamb, check that the correct specification has been used in the nutrient analysis (some cuts have a higher percentage of fat than others). Ask your procurement officer or supplier for the meat specification. Choose the closest match from the nutrient databank.
	Reduce the fat in recipes and select lower fat products. For example use potato rather than pastry toppings for pies; reduce the use of butter and spread in sandwiches; use low fat mayonnaise for your baked potato filling.
	Reduce the frequency of serving fried food items. Consider alternative cooking methods e.g. grilling and steaming.
High in saturated fat	Check that you have used the correct meat specification for the nutrient analysis.
	Consider using lower fat dairy products.
	Rather than hard margarine, butter, lard or suet, use margarines and spreads high in polyunsaturated fats.
Low in carbohydrate	Increase the portion sizes of plain starchy food such as boiled rice, pasta and potatoes, bread rolls or wraps.
High in Non-Milk Extrinsic (NME) Sugars	Check NME sugars have been calculated correctly. Use the step-by-step guide ¹⁵ .
	Consider reducing the sugar content of recipes, which can often be done without compromising the flavour. Use spices such as cinnamon, allspice, cloves, ginger, and nutmeg to give a sweet flavour.
	Reduce your dessert portion sizes if appropriate.
	Use reduced or low sugar products, for example fruit canned in water or fruit juice rather than syrup.
	Price fresh fruits and fruit-based desserts competitively to encourage students to choose these instead of cakes and biscuits.



Low in fibre	Decrease the use of white flour gradually throughout all recipes. Start by mixing half white and half wholemeal flour.
	Increase the availability of wholemeal bread.
	Use wholemeal flour, seeds and grains to make fruit-based desserts.
	Increase the use of brown rice, wholemeal pasta and wholewheat pizza bases.
	Add pulses such as beans, chick peas and lentils to recipes. These foods are inexpensive, high in fibre and can make a useful contribution to iron content.
	Add vegetables to recipes.
Low in iron	Beef and lamb are good sources. Iron content of beef is higher than lamb, but if only lamb is culturally acceptable then make sure that the portion sizes are sufficient. Ask your procurement officer or supplier for the meat specification and ensure that this is reflected accurately in your analysis.
	Include red meat in sandwich fillings or wraps.
	Include pulses such as lentils, peas and beans in vegetarian and meat-based dishes.
	Use wholemeal bread and pasta. Flour is one of the main sources of iron in the diet. White and brown flour is fortified with iron and calcium in the UK. Wholemeal flour is made from wholewheat grain so these minerals are already present.
	Cakes and biscuits made with brown or wholemeal flour can contribute to the iron content of a menu but ensure that you reduce the fat and sugar and include a fruit ingredient.
	Use breakfast cereals fortified with iron such as Cornflakes or Rice Krispies for toppings on crumbles, or coatings for meat or fish.
	Dried fruit such as apricots and raisins are useful sources of iron and can be included in salads and fruit-based desserts.
	Consider using black treacle as an alternative to sugar in cakes and biscuits. This sweetens food and can contribute to iron content.
	Spices (e.g. curry powder) and herbs (e.g. thyme) can help to increase the iron content of a dish. Substituting salt with herbs can also help reduce the sodium (salt) content. Herb garnishes also make dishes more appealing to students.
	Dark green leafy vegetables provide iron, as well as calcium, folate, vitamin C and carotene.
Low in zinc	Some food items may have missing data for zinc and this may make values look lower than they really are. In these cases ask the manufacturer for the nutrient data.
	Concentrate on iron. If your menu is compliant with the standard for iron or getting close to it then you are likely to be achieving the zinc standard.
	Quorn is high in zinc but low in iron so do not over use it on your menu.



Low in calcium	Make custard with skimmed or semi-skimmed milk rather than water.
	Make dairy-based (semi-skimmed milk or low fat yoghurt) smoothies.
	Promote dairy-based drinks as part of a meal deal and review the portion sizes of milk drinks (beware of increasing the NME sugars if using flavoured milks). Provide plain soya, rice or oat drinks, enriched with calcium for students who do not like, or cannot drink, milk.
	Include low fat dairy-based desserts such as fresh or frozen low-fat yogurt and fromage frais in meal deals, for example with fruit pots.
	Use low fat cheese or smaller portions of hard cheeses in popular dishes. Offer cheese and biscuits as a dessert option with a meal deal.
Low in vitamin A	Increase the amount of orange and yellow coloured vegetables such as carrots, sweet potatoes, and red peppers in main dishes, sandwiches, wraps, baked potato fillings, pizza toppings and soups. Include fruit such as peaches, nectarines or apricots in meal deals.
Low in vitamin C	If you have included a portion of fruit and vegetables/salad for each student to comply with the food-based standards, it is unlikely that your menu will be low in vitamin C.
	Do not forget to account for vitamin losses when analysing recipes.
	Potatoes are a good source of vitamin C.
Low in folate	If you have included a portion of fruit and vegetables/salad for each student to comply with the food-based standards, it is unlikely that your menu will be low in folate.
	Potatoes are a good source of folate.
	Introduce a salad and/or fruit bar for students to self-serve. Remember to label the options clearly so that students know what is in each salad and the cost of the various sized pots.
	Ensure that healthy items like fruit and vegetables are not more expensive than less healthy options like cakes and biscuits. Increase accessibility by placing fresh fruit in multiple outlets.
High in sodium	Substitute salt with herbs and spices.
	Most sodium is in processed or ready made foods. If these are popular products it can cause the menu to be too high in sodium. Check the nutrient analysis and you should be able to rank the products and recipes in your menu cycle by sodium content, to identify which foods are the biggest contributors, you can then modify or remove these.
	Choose products that comply with the FSA Target Nutrient Specifications for manufactured products used in schools ⁸ .

Case study 4:

Royal Docks Community School, in partnership with Newham Catering Services: borough wide analysis.



The caterer uses a variety of marketing approaches, including posters and menus displayed in the dining rooms.

Context

Description of the school, students and lunchtime provision

Royal Docks Community School (RDCS) is a secondary school located in the London Borough of Newham. Newham is the fourth most deprived borough in London and the 11th nationally. The school has an ethnically diverse student profile. At the start of the pilot (September 2007) the school had 1,100 students on roll and provided an average of 447 meals a day. Thirty per cent of the students are eligible for free school meals (FSMs) and the take-up of these is 87%.

Catering at RDCS is provided by Newham Catering and Cleaning Services (NCCS) who are responsible for providing school lunches in 12 out of the 15 secondary schools in Newham. RDCS has a Service Level Agreement (SLA), and “buys back” into the centrally managed local authority service. The core service offered to schools by NCCS is for lunch and mid-morning break. Most schools also operate a breakfast service and in some cases after school clubs too.

Action taken by the catering provider to:

Promote school lunches:

The caterer uses a variety of marketing approaches, including posters and menus displayed in the dining rooms. Competitions are also used and popular with students and raise the profile of the school lunch service. Theme days reflect the ethnicity and diversity of the borough as well as International themes such as European Languages Day or Black History Month. Special menus are generated to support each theme, which in turn supports the education of the students and engenders a whole school approach.



The 'lite bites' option is very popular with the students as it is quick to serve and allows them to participate in extra-curricula activities.

To fully understand student opinion, the caterer's Area Manager regularly attends School Council meetings or School Nutrition Action Groups (SNAG) to gain feedback on the types of dishes the students would like to see on offer. More recently, with the introduction of the food-based standards, these sessions have also been used to update students and keep school staff informed of the new legislation. This helps to promote an understanding of the reasons behind the removal of confectionery or restrictions on items such as meat products and deep-fried foods.

Enhance the training and qualifications of the school cooks: NCCS ensures all catering staff receive training in food hygiene, health and safety, nutrition, marketing and customer service, and quality assurance. Annually the school cooks attend a 1-day update on legislation and modifications to the service offer including menus, recipes and new products. New recipes are regularly rolled out to all sites by the Area Manager and Cook Supervisors are supported by product demonstrations.

Lunchtime provision at Royal Docks Community School

The lunch provision is categorised into two options, 'main meals' and 'lite bites', both of which are offered as meal deals. The 'main meals' offer includes two items; a rice or pasta-based dish or a traditional set meal, plus a fruit or dairy-based dessert or drink. The 'lite bites' offer includes three items; for example a sandwich/wrap, fruit or dairy-based dessert and a fruit or milk drink. Meal deals are an integral part of the caterer's service plan, and were originally introduced as an innovative solution to encourage secondary students to select a healthy balanced meal. They also facilitate speed of service as the students were finding it difficult to self-select from a multi choice, individually priced menu. The 'lite bites' option is very popular with the students as it is quick to serve and allows them to participate in extra-curricula activities.



To compete with this, the caterer had developed a healthier 'Chicken Shop' concept

Dining Facilities: RDCS has two serving outlets; the main dining room serves 'main meals' and hot 'lite bites'. The additional servery outside the main dining room (the Rotunda) offers cold 'lite bites' where independent purchases can also be made. The dining room has seating for 105 students and was re-modelled in 2007 with new café style tables and chairs. The physical size of the dining room is a major constraint, with seats for only 10% of the student population, and the school is exploring ways to increase the seating capacity. There is a 50-minute lunch period from 12:30 to 13:20.

Price of meals: At the start of the pilot (September 2007), meal deals were priced at £1.60, equivalent to the value of a Free School Meal.

External competition: The pilot was implemented as the food-based standards for school food other than lunch became mandatory (September 2007). The caterer initially observed a change in students' purchasing patterns. Students tended to buy the more substantial bread-based products such as wraps, sandwiches and filled rolls at mid-morning break (11:00), and then purchase their lunch from fast-food outlets after school (15:00) on their way home. Competition from nearby fast-food outlets, bakeries and supermarkets is a challenge across the borough. The closest local competition to RDCS was an outlet directly opposite the school entrance that sold chicken and chips for £1.00 and a can of carbonated soda for 50p. To compete with this, the caterer had developed a healthier '*Chicken Shop*' concept consisting of a natural roasted chicken portion (marinated with herbs and spices) accompanied by (non-fried) baked potato wedges, mini baked potato or vegetable rice, with salad or coleslaw and a fruit juice. Take-up of this competitively priced (£1.60) meal deal was high. At RDCS there is a stay on-site policy for Year 7–9 students but Year 10–11 are allowed off the school premises at lunchtime.

Promotions allowed the caterer to include premium products whilst maintaining the main offer price.

Pilot study

Working towards the nutrient-based standards using the whole school approach

The caterer's Area Manager has been actively reviewing the healthy eating aspect of school lunches across the borough for several years. She was keen to be part of the school food pilot, and identified Royal Docks Community School as 'generally representative' of Newham secondary schools. The Principal at RDCS, was also positive about the school's involvement in the pilot as part of a strategy to work towards Healthy School Status.

Each phase of the pilot was implemented using a 'whole school' approach. A pilot action group was set up. This included the Principal, the Food Technology Teacher, the caterer's Area Manager, the Healthy Schools co-ordinator, Newham Council's Contract Monitoring Officer, and student representatives from each year group who were also part of the School Nutrition Action Group (SNAG) which had been recently set up as part of working towards Healthy School Status.

Student feedback during initial meetings highlighted that the students were unaware of the full lunch offer. The caterer was keen to work with the students to set up a borough-wide marketing strategy for school lunches and decided to invest in the services of a professional marketing company. The marketing strategy included the installation of information boards inside and outside the dining room in all secondary schools across the borough. Electronic copies of the menu were circulated to students via e-mail and displayed in the schools on LCD screens, and counter top signs were installed to inform students of the offers at point of sale mirroring the High Street. Promotions, for example '*upgrade your drink for 20p*' allowed the caterer to include premium products whilst maintaining the main offer price. Secondary school cooks also had new chef style uniforms to show that something new and different was happening in the school lunch service across the borough.



Where possible the same dishes and products are used across all schools within the borough, which increases efficiency and takes advantage of economies of scale.

Menu analysis:

The caterer operates two 3-week rolling menu cycles – Autumn/Winter (November–Easter) and Spring/Summer (Easter–October). The menus are updated six months in advance to ensure that new products are either available via corporate supply contracts or can be developed in-house. The food costs associated with each newly developed menu cycle are assessed to ensure that the service meets the Regulations and is financially viable. Where possible the same dishes and products are used across all schools within the borough, which increases efficiency and takes advantage of economies of scale. Recognising that each school has different cultural requirements, the menus are adjusted centrally in collaboration with a school representative, who is responsible for signing-off the menu.

The caterer purchased Saffron™¹⁶ menu planning and nutrient analysis software in April 2007. Initially they catalogued all the recipes and products used within their menu cycles and collated all the associated nutritional information. After the collation exercise was complete and following a 1-day training course in July, the product specifications were entered onto the system and the analytical database was set up. An additional day's training was given in August,

after which the caterer was responsible for entering the recipes and portion sizes into the software. This involved the catering team entering data for 286 recipes and product specifications into the software, which took approximately three weeks. After this initial set up, it took approximately two weeks to create a menu cycle and include the provision mix. On-line support provided as part of the software support package, was accessed by the caterer for technical aspects of the programme.

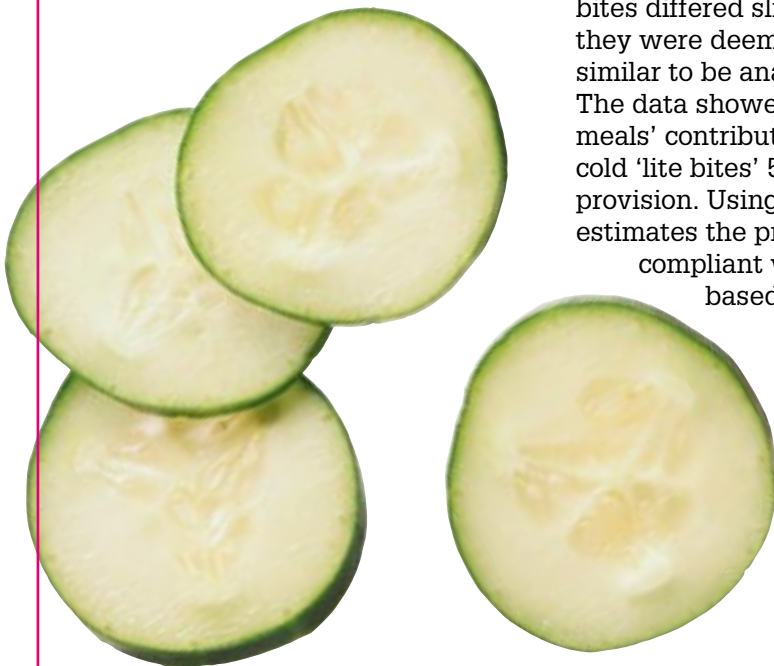
Phases of the pilot

Pre-pilot: The 3-week Autumn/Winter pre-pilot menu cycle was nutritionally analysed. The software package works on a theoretical population of 100 students. The pre-pilot menu was analysed using an estimated provision mix of 60% 'main meals' and 40% hot/cold 'lite bites'. This was based on an educated guesstimate as prior to the pilot the caterer had not looked in depth at the provision mix split between 'main meals' and 'lite bites'. The pre-pilot menu was compliant with all nutrient-based standards except calcium and iron.

The Area Manager said 'from experience generally when it rains, numbers go up and there is a shift from 'lite bites' to 'main meals' as the weather becomes colder'.

Phase 1 (17 September to 5 October 2007): In this phase subtle recipe modifications were made to increase the iron content of the menu such as adding herbs and spices to meat and vegetable main dishes. These are inexpensive ways to add variation to basic dishes and enhance flavour whilst minimising the addition of salt. To increase the calcium content, plain semi-skimmed milk and low fat fruit yoghurts were included as part of the meal deal offer. Phase 1 was also used to verify the provision mix estimates. This was done by gathering production data across the 12 secondary schools in the borough all of which use a similar 3-week menu cycle. Although the ratio between main meals and lite bites differed slightly site by site they were deemed sufficiently similar to be analysed as a group. The data showed that 'main meals' contributed 42% and hot/cold 'lite bites' 58% of the overall provision. Using these revised estimates the provision was not compliant with the nutrient-based standard for iron.

The variation observed between planned and actual provision was attributed to a combination of factors, including the purchasing patterns of year 7 students, the weather and Ramadan. Phase 1 took place at the beginning of the academic year. In recognition that the Year 7 students would require time to become familiar with the new environment schools often extend the lunch period. For example the Principal at RDCS allowed Year 7's to enter the dining room first and have an additional 10 minutes for lunch in the autumn term. For many students this was the first opportunity to exercise personal choice so they often chose 'lite bites' which are different to the complete meals offered in primary schools. In addition, September 2007 was exceptionally mild which resulted in many students opting for 'lite bites' so they could take advantage of the weather and eat outside. The Area Manager said *'from experience generally when it rains, numbers go up and there is a shift from 'lite bites' to 'main meals' as the weather becomes colder'*. Ramadan also took place during this phase so Muslim students, eligible for FSM did not always use their FSM entitlement when they were fasting.





Between phase 1 and phase 2 the caterer worked on modelling the 3-week menu cycle to increase the iron content. The caterer decided to use a dual strategy: i) to encourage the take-up of 'main meals' via marketing activity; and ii) to increase the nutrient density of 'lite bites' through the inclusion of premium range red meat fillings (for example meatball melts and hot beef sandwiches) and iron-enriched 'Chicken Shop' recipes. To increase the overall iron content of the menu, green lentils were added to meat and vegetarian dishes where appropriate such as lamb and vegetable hot pot, lamb and vegetable Balti, vegetable Saag curry and vegetable chilli. Chickpeas were added to oven roasted vegetable and cous cous. These are a relatively inexpensive source of iron. Wholemeal breaded fish replaced white breaded fish. The crumble mixture had cornflakes added as this cereal is fortified with iron. The addition had limited impact on taste and texture and was a popular option with pupils because of its familiarity. Other changes included increasing the size of the bread portion used for wraps and their fill level, plus the inclusion of an additional item (dessert, fruit or drink) in the meal deal price. New menu items such as soup, thick milk shakes and frozen smoothies were also introduced.

Phase 2 (14 January –

1 February 2008): During Phase 2 Newham Council introduced a comprehensive marketing strategy to promote main meals. They also ran a free lunch trial called '*Have lunch on us*' to increase school meal take-up across the borough, as part of the School Food Trust's Million Meals campaign. For more information on the Trust's campaign please go to www.schoolfoodtrust.org.uk/millionmeals. Each Tuesday over a 4-week period a different year group was invited to have a free lunch. This initiative was well supported by schools and was particularly popular with Year 10 and 11 students, which was not anticipated, yet a very welcome development.

It was predicted that the marketing activity would change the provision mix between 'main meals' and 'lite bites' to 50:50. Actual provision data from schools across the borough showed that this estimate was accurate. This was attributed to the positive impact of the marketing activity around 'main meals' and the 'have a lunch on us' trial. The actual provision data from schools across the borough showed that the proportion of 'main meals' increased to 49% and hot/cold 'lite bites' decreased to 51%. This provision mix resulted in the iron content increasing but not to a compliant level.

Between phases 2 and 3 the caterer obtained support from a qualified dietitian who advised on various approaches to increase the iron content of the menu. The caterer trialled 11 new iron-rich recipes at Forest Gate Community School, the most popular options Kheema Naan, Italian meat loaf, pasta bake with cannellini beans, chocolate sponge cake made with black treacle were included in the phase 3 menu cycle. Other options for increasing iron content of current recipes were also explored; these included adding pulses such as kidney beans and cannellini beans to vegetarian pasta bakes, chilli and curry. The iron content of starchy accompaniment was enhanced by using a mixture of brown and white rice, the white spaghetti was replaced with wholewheat

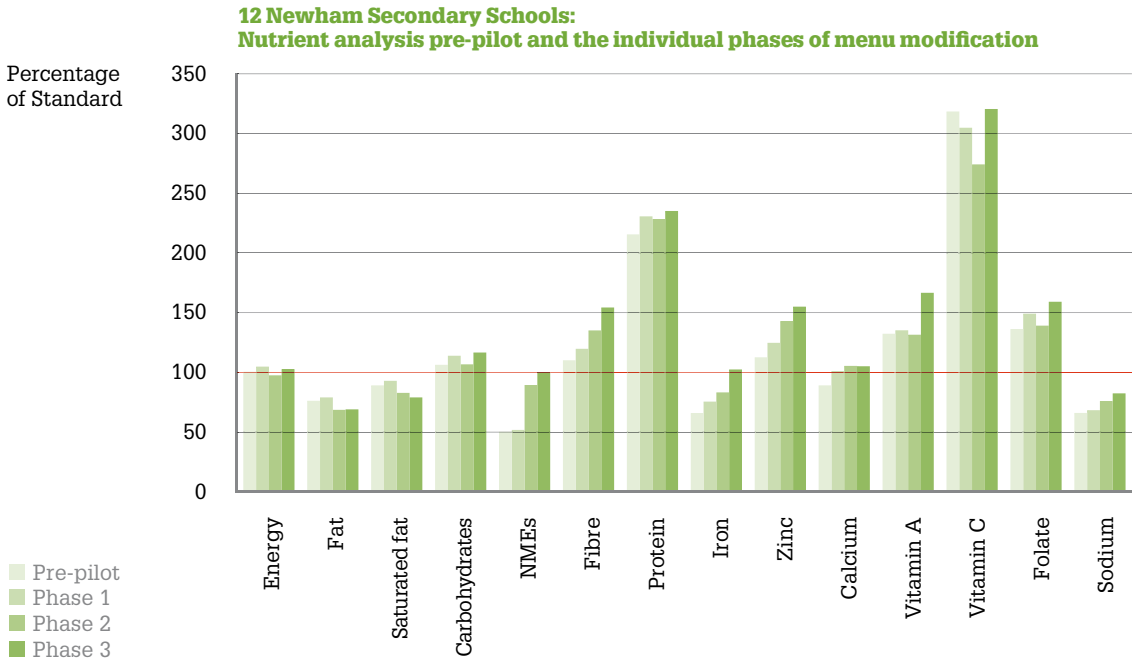
spaghetti and a slice of wholemeal bread was added to the salad boxes as part of the meal. Dried apricots or raisins were added to the fruit bags. These modifications were successfully trialled during April and May at RDCS and subsequently the standard for iron was met. This 3-week compliant Autumn/Winter menu cycle will be used in September 2008 across the borough along with an enhanced marketing strategy that will continue to focus on increasing the take-up of main meals. The price of the meal deals will remain static at £1.60 the equivalent to the value of a Free School Meal in Newham.

The nutrient analyses of the pre-pilot menu and each phase of the pilot is shown on page 4.61.



12 Newham secondary schools: Nutrient analysis of pre-pilot and the individual phases of menu modification											
Nutrient	Max. /Min.	%	Nutrient standard	Pre-pilot borough		Phase 1 Sep 2007		Phase 2 Jan 2008		Phase 3 May 2008	
				Nutrient	Standard met	Nutrient	Standard met	Nutrient	Standard met	Nutrient	Standard met
Energy	EAR*	30	646± 32.3	635	✓	674	✓	625	✓	660	✓
Fat (g)	Max	35	25.1	19.0	✓	19.7	✓	17.1	✓	17.2	✓
Saturated fat (g)	Max	11	7.9	7.0	✓	7.3	✓	6.5	✓	6.2	✓
Carbohydrate (g)	Min	50	86.1	91.1	✓	97.6	✓	91.4	✓	100	✓
NMES (g)	Max	11	18.9	9.4	✓	9.7	✓	16.8	✓	18.8	✓
Fibre (g)	Min	30	5.2	5.7	✓	6.2	✓	7.0	✓	8.0	✓
Protein (g)	Min	30	13.3	28.6	✓	30.6	✓	30.3	✓	31.2	✓
Iron (mg)	Min	35	5.2	3.4	✗	3.9	✗	4.3	✗	5.3	✓
Zinc	Min	35	3.3	3.7	✓	4.1	✓	4.7	✓	5.1	✓
Calcium	Min	35	350	310	✗	352	✓	367	✓	366	✓
Vitamin A (µg)	Min	35	245	323	✓	330	✓	321	✓	407	✓
Vitamin C (mg)	Min	35	14.0	44.5	✓	42.6	✓	38.3	✓	44.8	✓
Folate (µg)	Min	35	70	95	✓	104	✓	97	✓	111	✓
Sodium (mg)	Max	30	714	468	✓	484	✓	538	✓	585	✓

* Estimated Average Requirement



The marketing strategy included staff training, uniforms, display boards and promotional materials i.e. posters that advertised meal deals, and parent flyers.

Evaluation of the pilot study

Impact on staff hours: There was an impact on staffing levels and the hours needed to deliver the service. This was due to the preparation of fresh fruit and vegetables, salad, salad boxes, fresh fruit, fruit salads and fruit bags. The development of a marketing strategy took a significant amount of the Area Manager's time.

Impact on kitchen equipment/facilities: Some kitchens in the borough required additional refrigerated storage and display space. Vegetable processors were supplied for all sites to assist with increased vegetable preparation.

Cost of menu modifications: Food costs had increased by approximately 5 pence per plate (to 70 pence per plate) since 2006. This increase had been attributed to the use of better quality products for example 100% fruit juices and combination drinks such as blends of fruit juice and water rather than flavoured water. Other costs were associated with the recipe modifications and procuring ingredients, which had not previously been included in the recipes for example green lentils, raisins and dried apricots.

Investment in marketing strategy: The marketing strategy implemented during the pilot across the borough cost £20,000, this was financed through the NCCS marketing budget. The marketing strategy included staff training, uniforms, display boards and promotional materials i.e. posters that advertised meal deals, and parent flyers.

Impact on take-up: The caterer reported that meal take-up fell by 15% during 2006/07 and by a further 7% in 2007/08. An increase in take up of 4.8% during the 4-week free lunch trial reversed this trend. 'Main meal' take-up increased by 7% throughout the pilot, mainly due to the promotion and free lunch trial. Take-up of hot 'grab and go' premium items increased, and sales of the cold 'lite bite' offer also remained consistent.

Key to success/good practice

Consultation: During the pilot the students were regularly consulted by the caterer's Area Manager who attended the SNAG meetings. The student's feedback was instrumental in developing appropriate meal deals and instigating the marketing strategy. The importance of consultation was reiterated by the RDCS Principal who said *"The experience of running the School Food Trust pilot has been a very positive one for the school. I cannot emphasise enough the importance of a whole school approach to the success of initiatives like this. The student feedback has enabled the senior management team and the catering service provider to focus on issues, target areas of improvement and work towards solutions"*.

Marketing strategy: This was instrumental in creating student awareness of the lunchtime offer. Assistance from a professional marketing company provided invaluable advice, for example in the use of premium products such as upgrade your drink for 20p. The Area Manager said *"Student feedback is positive. They feel that the inclusion of premium products means that school meals have a higher quality and are well balanced nutritionally 'not cheap rubbish'. The use of premium products also gives the school offer a street-wise edge that pupils recognise whilst maintaining the price point of the main offer"*.

Meal deals: Competitively priced meal deals provide an innovative solution encouraging students to select a nutritionally balanced meal, facilitating the speed of a busy service and challenging competition from fast-food outlets. Although all the meal deals were priced at the value of a free school meal in cases when students had slightly less to spend there was the opportunity to buy single 'lite bite' items from the additional servery.



At RDCS students requested more cultural foods specifically 'recipes my mum would cook at home'. Many of NCCS staff are mothers and are encouraged to develop authentic recipes that are used on student special days.

Dining room supervision:

In schools like RDCS with inadequate dining facilities, dining room supervision is key to facilitating a quick service, reducing queuing and creating a safe eating environment. Dining room supervisors also have an important role to play in educating students to select healthy choices. The dining room supervisors were encouraged to be familiar with the various meal deals so they could inform the students what was on offer while they were queuing.

Analysing menus for a group of schools:

The pilot clearly highlighted to the caterer the difference between planned provision and actual provision and the impact on the degree of compliance of the menu.

Key challenges for the future

Staff training: NCCS' Area Manager said *"The key challenge for NCCS is to train the catering team so they feel empowered to provide an excellent catering service within the current and forthcoming legislative requirements"*.

Labour costs: Increasing labour costs associated with cooking more fresh food from scratch, which require more preparation time.

Building Schools for the Future programme:

It is important that adequate kitchen and dining facilities are included within the Building Schools for the Future Programme. NCCS' Area Manager said *"It is important that they are spacious enough to accommodate any future changed service requirement and appropriately equipped for example fryers do not feature largely in new kitchens, whereas vegetable preparation machines, convection ovens, pasta cookers and chilled storage does"*.



In the future we are also hoping to involve the students and encourage them to suggest and supply recipes using 'student special' days.

Increasing take-up: RDCS

Cook Supervisor said *"My main challenge is to keep meal numbers up by providing an appetising and healthy choice at lunchtime that students enjoy eating."* NCCS' Area Manager said *"We currently feature special days with suppliers to trial new concepts and products on school sites. The students enjoy this as they have free tasting samples and are able to give feedback. It helps us source products and assists our suppliers to develop relevant lines. NCCS are currently running a monthly programme of chef special days across the borough. Where the school cook /or catering staff produce their signature dish this makes the cooks feel appreciated. Suppliers have even asked our staff for recipes. In the future we are also hoping to involve the students and encourage them to suggest and supply recipes using 'student special' days. If these are a success we may even include them in our recipe book".*

Royal Docks Community School 3-week compliant menu cycle

Week 1	Monday	Tuesday	Wednesday	Thursday	Friday
Main meal	Chicken and vegetable pasta bake (9)	Lamb and vegetable Tikka Masala with rice (20)	Mediterranean chicken and vegetables with sunshine rice (10)	Tuna Arrabiata Pasta Bake (20)	Chicken and vegetable Balti and rice (20)
	Minced beef and onion pie, with mashed potatoes (30)	Wholemeal Breaded fish fillet and baby baked potato (9)	Beef lasagne (30)	Chicken and vegetable stir-fry with white and brown rice (9)	Salmon Fillet with soft crumb topping and baby baked potatoes (12)
Vegetarian	Oven Roasted Vegetables and couscous (10)	Tomato and herb pasta bake (20)	Baked potatoes with hot and cold fillings (18)	Vegetarian Shepherd's Pie (20)	Vegetable pasta bake (17)
Vegetable/salad accompaniments	Country Vegetable Mix (34)	Fresh carrots roundels (34)	Salad (84)	Green cabbage (34)	Garden Peas (42)
	Mixed salad pot (50)	Mixed salad pot (50)		Mixed salad pot (50)	Mixed salad pot (42)
Extra bread	Free fresh bread available daily with main meals				
Hot desserts	Not offered	Chocolate pear sponge and chocolate sauce (45)	Not offered	Apple and Apricot crunch top crumble and custard (45)	Not offered
Additional desserts/ drinks	Fresh fruit (5) Mixed fruit bag (30) Fruit salad (5) Fruit yoghurt (15) Frozen yoghurt (12) Fruit ice cream (10) American style muffins (36) Cheese and crackers (8) Smoothies (1) Aquajuce (14) Semi-skimmed milk (15)	Fresh fruit (5) Mixed fruit bag (25) Fruit yoghurt (15) Frozen yoghurt (10) Fruit ice cream (10) American style muffins (3) Cheese and crackers (8) Smoothies (1) Aquajuce (14) Semi-skimmed milk (15)	Fresh fruit (5) Mixed fruit bag (30) Fruit salad (5) Fruit yoghurt (15) Frozen yoghurt (12) Fruit ice cream (10) American style muffins (36) Cheese and crackers (8) Smoothies (1) Aquajuce (14) Semi-skimmed milk (15)	Fresh fruit (5) Mixed fruit bag (25) Fruit yoghurt (15) Frozen yoghurt (10) Fruit ice cream (10) American style muffins (3) Cheese and crackers (8) Smoothies (1) Aquajuce (14) Semi-skimmed milk (15)	Fresh fruit (5) Mixed fruit bag (30) Fruit salad (5) Fruit yoghurt (15) Frozen yoghurt (12) Fruit ice cream (10) American style muffins (36) Cheese and crackers (8) Smoothies (1) Aquajuce (14) Semi-skimmed milk (15)
Hot 'Lite bites' Grab and go	Variety pizza, 2 types vegetarian (9)	Variety pizza 2 types vegetarian (6)	Variety pizza, 2 types vegetarian (6)	Variety pizza, 2 types vegetarian (8)	Variety pizza, 2 types vegetarian (8)
	Filled baked potatoes (9)	Filled baked potatoes (9)	Filled jacket potato – see main meals above	Filled jacket potato (9)	Filled jacket potato (9)
	Kentucky style chicken potato wedges (8)	Keema Naan- lamb (13)	Italian meatloaf ciabatta – beef (13)	Spicy Beef Meatball Melt (12)	Toasted Italian Meatloaf Panini – beef (18)
	Spicy beef hoagie (15)	Quesadilla – spicy beef filling (13)	Chicken shop TexMex style, potato wedges (13)	Moroccan Filled Flatbread – lamb (12)	Quesadilla-spicy chicken filling (6)
Cold 'Lite bites' & salads	Tortilla wraps – 4 varieties, sandwiches, folded flat bread, bagel, deli rolls, hoagie rolls and boxed salad (10)				

Week 2	Monday	Tuesday	Wednesday	Thursday	Friday
Main meal	Baked potatoes and fillings (18)	Beef goulash and vegetable rice (30)	Lamb pasta Bolognese (20)	Jerk Chicken and vegetable rice (15)	Lamb and vegetable Balti and rice (25)
	Tuna, tomato and basil pasta bake (21)	Breaded salmon fillet and potato wedges (9)	Braised chicken in gravy and mashed potato (9)	Salmon and broccoli pasta bake (10)	
Vegetarian	Vegetable chill and rice (21)	Tomato and pesto pasta bake (10)	Vegetarian saag curry and rice (20)	Spicy vegetable fajitas and potato wedges (24)	Vegetable pasta bolognaise (20)
					Creamy Vegetable Pie (4)
Vegetable/salad accompaniments	Salad (84)	Garden Peas (42)	Country vegetables (34)	Sweet corn (34)	Baked Beans (34)
		Mixed salad pot (42)	Mixed salad pot (50)	Mixed salad pot (50)	Mixed salad pot (50)
Extra bread	Free fresh bread available daily with main meals				
Hot desserts	Not offered	Apple and Raspberry Crunch Top Crumble and custard (45)	Not offered	Apricot sponge and custard (45)	Not offered
Additional desserts/drinks	Fresh fruit (5) Mixed fruit bag (30) Fruit salad (5) Fruit yoghurt (15) Frozen yoghurt (12) Fruit ice cream (10) American style muffins (36) Cheese and crackers (8) Smoothies (1) Aquajuce (14) Semi-skimmed milk (15)	Fresh fruit (5) Mixed fruit bag (25) Fruit yoghurt (15) Frozen yoghurt (10) Fruit ice cream (10) American style muffins (3) Cheese and crackers (8) Smoothies (1) Aquajuce (14) Semi-skimmed milk (15)	Fresh fruit (5) Mixed fruit bag (30) Fruit salad (5) Fruit yoghurt (15) Frozen yoghurt (12) Fruit ice cream (10) American style muffins (36) Cheese and crackers (8) Smoothies (1) Aquajuce (14) Semi-skimmed milk (15)	Fresh fruit (5) Mixed fruit bag (25) Fruit yoghurt (15) Frozen yoghurt (10) Fruit ice cream (10) American style muffins (3) Cheese and crackers (8) Smoothies (1) Aquajuce (14) Semi-skimmed milk (15)	Fresh fruit (5) Mixed fruit bag (30) Fruit salad (5) Fruit yoghurt (15) Frozen yoghurt (12) Fruit ice cream (10) American style muffins (36) Cheese and crackers (8) Smoothies (1) Aquajuce (14) Semi-skimmed milk (15)
Hot 'Lite bites' Grab and go	Variety pizza, 2 types vegetarian (6)	Variety pizza 2 types vegetarian (8)	Variety pizza, 2 types vegetarian (6)	Variety pizza, 2 types vegetarian (8)	Variety pizza, 2 types vegetarian (6)
		Filled jacket potato (9)	Filled jacket potato (8)	Filled jacket potato (9)	Filled jacket potato (9)
	Keema Naan – lamb (12)	Chicken shop-Cajun style and potato wedges (8)	Moroccan Filled flatbread – lamb (20)	Chicken shop, Tex Mex and potato wedges (12)	Chicken Shop Cajun Style (13)
	Fish burger in wholemeal bun (12)	Italian Meatloaf ciabatta – beef (16)	Vegetarian Hoagie Melt (7)	Quesadilla Spicy Beef filling (12)	Toasted Italian Meatball Panini – beef (13)
Cold 'Lite bites' & salads	Tortilla wraps – 4 varieties, sandwiches, folded flat bread, bagel, deli rolls, hoagie rolls and boxed salad (10)				

() indicates the estimated provision mix

Week 3	Monday	Tuesday	Wednesday	Thursday	Friday
Main meal	Chicken chasseur and Vegetable rice (14)	Beef chilli and white and brown rice (30)	Cajun chicken and vegetables and rice (11)	Shepherds pie (lamb)(30)	Mediterranean style chicken and Balti rice (20)
	Breaded fish fillet and chips (15)	Filled baked potatoes with hot and cold flings (18)	Spaghetti bolognaise – beef (23)	Spicy tuna pasta bake (9)	Tuscan Bean pasta Bake (14)
Vegetarian	Pasta and vegetali sauce (20)	Sweet and sour vegetables with Quorn and noodles (10)	Vegetarian sausages in tomato and herb sauce and mashed potatoes (15)	Vegetarian Balti with rice (10)	Cheese and Onion Pasty and baby baked potatoes (15)
Vegetable/salad accompaniments	Garden Peas (42)	Salad (84)	Mixed Vegetables (34)	Green Cabbage (34)	Green Beans (34)
	Mixed salad pot (42)		Mixed salad pot (50)	Mixed salad pot (50)	Mixed salad pot (50)
Extra bread	Free fresh bread available daily with main meals				
Hot desserts	Not offered	Chocolate pear sponge and chocolate sauce (45)	Not offered	Dutch Apple Sponge and custard (45)	Not offered
Additional desserts/ drinks	Fresh fruit (5) Mixed fruit bag (30) Fruit salad (5) Fruit yoghurt (15) Frozen yoghurt (12) Fruit ice cream (10) American style muffins (36) Cheese and crackers (8) Smoothies (1) Aquajuce (14) Semi-skimmed milk (15)	Fresh fruit (5) Mixed fruit bag (25) Fruit yoghurt (15) Frozen yoghurt (10) Fruit ice cream (10) American style muffins (3) Cheese and crackers (8) Smoothies (1) Aquajuce (14) Semi-skimmed milk (15)	Fresh fruit (5) Mixed fruit bag (30) Fruit salad (5) Fruit yoghurt (15) Frozen yoghurt (12) Fruit ice cream (10) American style muffins (36) Cheese and crackers (8) Smoothies (1) Aquajuce (14) Semi-skimmed milk (15)	Fresh fruit (5) Mixed fruit bag (25) Fruit yoghurt (15) Frozen yoghurt (10) Fruit ice cream (10) American style muffins (3) Cheese and crackers (8) Smoothies (1) Aquajuce (14) Semi-skimmed milk (15)	Fresh fruit (5) Mixed fruit bag (30) Fruit salad (5) Fruit yoghurt (15) Frozen yoghurt (12) Fruit ice cream (10) American style muffins (36) Cheese and crackers (8) Smoothies (1) Aquajuce (14) Semi-skimmed milk (15)
Hot 'Lite bites' Grab and go	Variety pizza, 2 types vegetarian (6)	Variety pizza 2 types vegetarian (6)	Variety pizza, 2 types vegetarian (6)	Variety pizza, 2 types vegetarian (6)	Variety pizza, 2 types vegetarian (3)
	Filled jacket potato (9)	Filled jacket potato (9)	Filled jacket potato (9)	Filled jacket potato (9)	Filled jacket potato (12)
	Italian Meatloaf Ciabatta – beef (18)	Quesadilla – beef chilli filling (8)	Jumbo Sausage Baguette (10)	Chicken shop- Jerk style, potato wedges (13)	Chicken Shop -Mediterranean Style (13)
	Quesadilla – spicy chicken filling (8)	Chicken shop- BBQ style and potato wedges (16)	Spicy Beef Hoagie (16)	Keema Naan – lamb (13)	Toasted Italian Meatloaf Panini – beef (13)
Cold 'Lite bites' & salads	Tortilla wraps – 4 varieties, sandwiches, folded flat bread, bagel, deli rolls, hoagie rolls and boxed salad (10)				

() indicates the estimated provision mix

Case study 5:

Windlestone School



Context

Description of the school, pupils and lunchtime provision

Windlestone is a Special Needs (social, emotional, and behavioural difficulties) day, extended day and residential secondary school in Chiltern, Ferryhill, Durham. At the time of the pilot (May 2007 to April 2008) Windlestone catered for 70 pupils (10 day, 40 extended day, and 20 residential). The school also runs an in-school unit called Stepping Stones, for 10 pupils from other schools. These pupils are not on the roll but the school provides lunch for them. Windlestone worked in collaboration with the pupils towards Healthy School status during 2006–07 receiving National Healthy School status in July 2007.

The catering at Windlestone is provided in-house. A team of two cooks are responsible for preparing and serving breakfast, lunch and tea on-site. The school bursar has responsibility for all financial and personnel aspects of school catering. All pupils receive free school meals at Windlestone (and have done since 1994) and currently 75% of pupils eat regularly.

Action taken by the catering provider to

Promote school lunches:

Windlestone is a relatively small school so the cooks get to know the personal likes and dislikes of each pupil. If they put on new dishes, they give out tasters to pupils, and the weekly menu is displayed in the dining room. The school also has a theme day once a month. An open day is held annually during the summer term for parents where the lunch provision is showcased and the parents are encouraged to taste the dishes on offer. This provides an opportunity to display examples of healthy food provision and to display the work pupils have done in class to develop their understanding of a healthy lifestyle. It also provides an opportunity to seek parents'/carers' and governors' views to inform policy and practice. Since the pupils come from across and outside the County, there is limited opportunity to communicate directly with parents/carers other than by post or phone. The SEN teacher has produced a leaflet communicating the healthy eating message based on the "Food in Schools for Parents" booklet¹³. In July 2007, the open day was used as a vehicle for providing a healthy buffet and conveying the school's recent Healthy School status to parents, governors and other stakeholders. Parents also receive information on the School Food Regulations when they attend their child's annual review meeting.



Enhance the training and qualifications of the school cooks:

The school cooks have City and Guilds qualifications (including a nutrition component). As in-house cooks they feel slightly isolated and value the opportunity to receive further training to develop new menus and recipes. During the pilot they visited colleagues in nearby schools to gain an understanding of practices that other schools have adopted in meeting the new standards.

Lunchtime provision at Windlestone

Windlestone has a 3-week menu cycle. Fruit, yoghurts, fresh bread, salads and water are freely available.

Dining facilities: Windlestone moved to a new purpose built school in September 2006. Prior to the move the head teacher had insisted pupils were involved in the design of the new school particularly the dining room called 'Le Café', which is light and has a welcoming atmosphere. The staff and pupils researched appropriate furniture, cutlery and crockery to ensure that it was robust and attractive. The new build also allowed the school to change the dining room from table service

to self-service. One of the pupils' initial concerns about changing to self-service was that their favourite food items would not be available unless they arrived at the beginning of service, causing long queues. To overcome this issue the catering staff ensured that the lunch counter was kept fully supplied with all choices as far as possible.

Windlestone operates a flexible lunchtime enabling pupils to take part in other lunchtime activities. There is a 40-minute lunch service from 12:40 to 13:20.

External competition: There is limited surrounding competition as the nearest food shops are over a mile away from the school. Pupils can earn one of 12 daily privilege cards to go off-site through good behaviour or work.



Throughout the pilot, pupils' views on the menu modification were gathered through one to one interviews and questionnaires.

Pilot Study

Working towards the nutrient-based standards using the whole school approach

Windlestone School volunteered to be a pilot school as they had already redesigned their lunch menu to meet the interim food-based standards and were keen to implement the forthcoming nutrient-based standards. The school has been supported by a registered community dietitian employed by County Durham and Darlington Acute Hospitals NHS Trust. From April 2006 to April 2008, the dietitian was seconded one day per week to Durham LA to support the implementation of School Food Regulations.

Throughout the pilot, pupils' views on the menu modification were gathered through one to one interviews and questionnaires. This built upon the standard practice of canvassing pupils' views on school meals on a termly basis. Healthy eating also continues to be addressed in PSHE lessons in year 7 and year 10.

Menu analysis

The dietitian visited the school on a number of occasions and interviewed the cooks to understand how they prepared each dish, including the exact amounts of ingredients, a clear description of the cooking method and portion sizes. Many of the recipes were homemade well-practiced favourites which did not specify precise imperial or metric weights. The dietitian had to work out metric quantities, for example how much 'a pinch' or a 'handful' of each ingredient weighed. To standardise a week's recipes and undertake recipe analysis took about 5 working days. The whole menu was then nutritionally analysed using SaffronTM 16 menu planning and nutrient analysis software. In addition to the recipes, the extra freely available provision was also included in the analysis, with the exception of the extra bread.



To ensure that the menu met the nutrient-based standards and remained practical, the dietitian worked in partnership with the school cooks, identifying how the menu could be modified with limited impact on the cooks' preparation time.

Phases of pilot

Pre-pilot: The pre-pilot menu complied with the final food-based standards. The nutritional analysis identified that nutrient-based standards for energy, saturated fat, iron and sodium were not met. The dietitian reported that increasing the iron and reducing the sodium levels were the two main challenges.

Phase 1 (17 September to

5 October 2007): To ensure that the menu met the nutrient-based standards and remained practical, the dietitian worked in partnership with the school cooks, identifying how the menu could be modified with limited impact on the cooks' preparation time. The dietitian initially worked on reducing energy by focusing on reducing the fat and saturated fat content of the menu. The main contributors to these were the daily sponge-based desserts, so the dietitian and cooks agreed to replace some of these with fruit-based and low fat dairy-based desserts. The sodium content of the menu was also too high, but changing the gravy recipe and substituting the bacon chop with pork chop addressed this. Reducing the use of cheese also helped to reduce the

saturated fat and sodium content. The key challenge for the dietitian was further increasing the iron content of the menu while balancing the saturated fat content. Increasing the frequency of serving red meat on the menu was considered but this had implications for saturated fat content and cost. The dietitian decided to replace one pork dish with a beef option. Prior to the pilot the menu did not specify which vegetables would be provided each day as this varied depending on seasonal availability. Once the pilot began the vegetables were specified in advance with the dietitian selecting those higher in iron such as curly kale. This was popular with the pupils who knew what would be available every day. The modifications made during Phase 1 meant that all nutrient-based standards were met except for energy and iron.



The dietitian commissioned to develop secondary school lunch recipes with increased iron content reviewed the Windlestone menu in detail to explore ways to enhance the overall iron content.

Phase 2: (14 January – 5 February 2008): To increase the iron content and lower the energy content of the menu, the cooks focused on a few main dishes, this involved slight modifications to the main meals, for example the beef stew was modified to chunky beef stew, the meat portion of the dish was slightly increased and more vegetables were included. Baked sausages and spicy beef burgers were added as a popular alternative to dishes such as fried fish. This successfully lowered the energy content, however the menu remained non-compliant for iron.

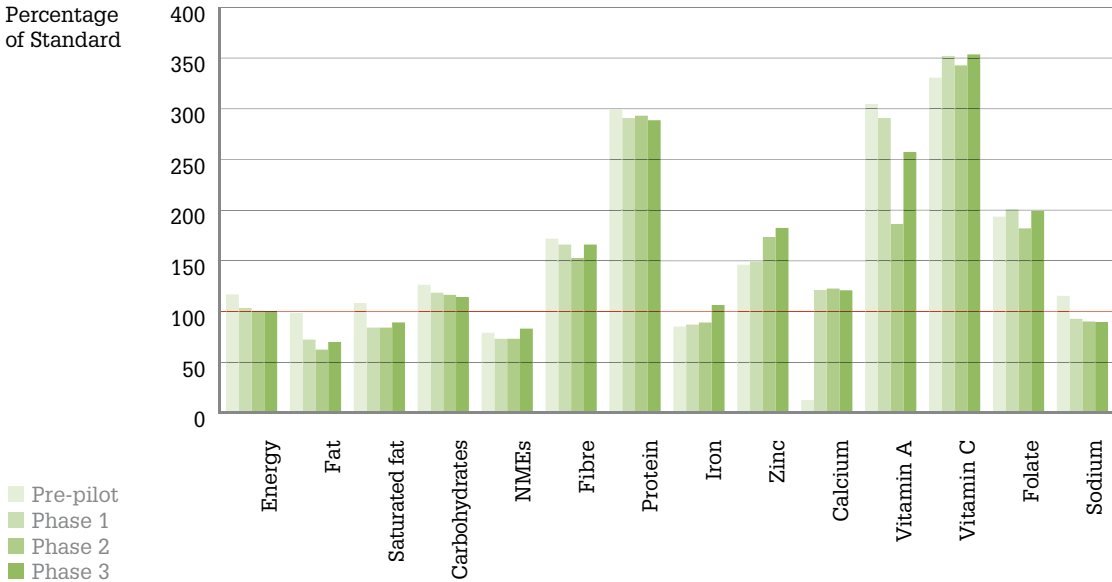
Phase 3: (April 2008): In preparation for the 3rd phase the dietitian commissioned to develop secondary school lunch recipes with increased iron content reviewed the Windlestone menu in detail to explore ways to enhance the overall iron content. For further information please see the Trust's Report on the development of secondary school lunch recipes with increased iron content¹⁴. The following suggested recipe modifications and substitutions were successfully trialled during May. These included white spaghetti being replaced with wholemeal spaghetti, the addition of kidney beans to the tuna salad, serving bread croutons with the Scotch broth, serving stuffing with roast pork and mint sauce with roast lamb, adding pureed fruit to the rice pudding. Three main courses and four dessert recipes were also successfully cook tested and taste tested. These included chicken and lentil curry, lamb and haricot bean casserole, fish and spinach pie, bran gingerbread, bread and butter pudding with dried fruit, apricot slice and apple and raisin sponge. Using these recipes the Windlestone menu was compliant with the standard for iron.

Windlestone: Nutrient analysis of pre-pilot and the individual phases of menu modifications

Nutrient	Max. /Min.	%	Nutrient standard	Pre-pilot		Phase 1 Sept 2007		Phase 2 Jan 2008		Phase 3 Apr 2008	
				Nutrient	Standard met	Nutrient	Standard met	Nutrient	Standard met	Nutrient	Standard met
Energy	EAR*	30	646± 32.3	789	✗	698	✗	669	✓	677	✓
Fat (g)	Max	35	25.1	24.6	✓	18.0	✓	15.5	✓	17.4	✓
Saturated fat (g)	Max	11	7.9	8.5	✗	6.6	✓	6.6	✓	7.0	✓
Carbohydrate (g)	Min	50	86.1	108.2	✓	101.5	✓	99.7	✓	97.7	✓
NMES (g)	Max	11	18.9	14.8	✓	13.7	✓	13.7	✓	15.6	✓
Fibre (g)	Min	30	5.2	8.9	✓	8.6	✓	7.9	✓	8.6	✓
Protein (g)	Min	30	13.3	39.7	✓	38.6	✓	38.9	✓	38.3	✓
Iron (mg)	Min	35	5.2	4.4	✗	4.5	✗	4.6	✗	5.5	✓
Zinc	Min	35	3.3	4.8	✓	4.9	✓	5.7	✓	6.0	✓
Calcium	Min	35	350	418	✓	422	✓	427	✓	421	✓
Vitamin A (µg)	Min	35	245	745	✓	711	✓	455	✓	629	✓
Vitamin C (mg)	Min	35	14.0	46.2	✓	49.2	✓	47.9	✓	49.4	✓
Folate (µg)	Min	35	70	135	✓	140	✓	127	✓	139	✓
Sodium (mg)	Max	30	714	820	✗	658	✓	639	✓	635	✓

* Estimated Average Requirement

Windlestone:
Nutrient analysis of pre-pilot and the individual phases of menu modifications





The cooks reported limited impact on their preparation time, as they were already preparing food from scratch, and any recipe modifications or substitutions suggested by the dietitian were discussed in detail to minimise any impact on preparation time.

Evaluation of the pilot study

Impact on staff time/labour costs: At the start of the pilot there was an increased demand on the cooks' time as they worked with the dietitian to standardise all recipes. The cooks reported limited impact on their preparation time, as they were already preparing food from scratch, and any recipe modifications or substitutions suggested by the dietitian were discussed in detail to minimise any impact on preparation time. The phased approach meant that changes made to the menu were manageable.

Impact on kitchen equipment/facilities: The kitchen equipment and facilities were new and had been designed in consultation with the cooks. Small pieces of equipment were requested such as a hand blender for making fresh breadcrumbs and chopping fresh herbs. The Bursar also suggested changing the servery around, as the salad bar was before the hot food counter but pupils prefer to be served the hot food first.

Cost of menu modifications:

The Bursar reported that with the introduction of the interim food-based standards for school lunches in 2006, the food bill for the new menus was quite high. However, by ordering from Durham Local Authority preferred suppliers, the food costs were reduced substantially. The Bursar said that during the pilot the food bill had gone up but as food prices had also increased the increased costs could not be directly attributed to implementing the nutrient-based standards.

Impact on take-up: The head teacher reported that it was difficult to disentangle the complexities around take-up as there are many factors that determine whether a pupil eats lunch. There are day-to-day fluctuations but generally take-up is high due to free school lunches. To avoid disappointment when a favourite dish is removed from the menu, the pupils are encouraged to take a sample of the new dish and if they do not like it they can choose an alternative. From everyone's perspective (cooks, dietitian and pupils) the implementation of the nutrient-based standards which involved subtle recipe modifications was far less noticeable compared to the food-based standards, which involved restriction and removal of food items.



The cooks also reported an increase in job satisfaction knowing that the food the pupils were enjoying was nutritionally balanced.

Key to success/good practice

Leadership from head teacher/

Principal: Strong leadership from the head teacher and support from the Senior Management Team were seen by all staff as crucial for healthy eating to be accepted as an integral part of the school day. The introduction of the food-based standards for school food other than lunch in September 2007 was a noticeable change, which required negotiation with the pupils as certain products were removed.

Involvement of the whole school

community: This is particularly important for a residential school, because some pupils have three meals a day and food is an integral part of school life. The dietitian noticed that since she had been supporting them, the whole school was keen to be involved in healthy eating. One of the most important factors was the involvement of all pupils through the pupil forum, which meets daily to discuss any issues including those around food provision.

Support of qualified dietitian:

Nutritional analysis was undertaken by a qualified dietitian, and her advice and guidance was essential in improving the nutrient density of the menu cycle. She reported that the school cooks had developed a deeper understanding of how to reduce the saturated fat and sodium content of the menu and increase the iron content. By phase 2, they were intuitively suggesting appropriate modifications. The cooks also reported an increase in job satisfaction knowing that the food the pupils were enjoying was nutritionally balanced. The Bursar had noticed an increase in the cooks' enthusiasm and general interest in the food they were preparing.

Communication: Regular dialogue between the cooks and the dietitian was crucial to ensure that any menu modifications remained practical and had limited impact on the cooks preparation time.



The school also has a horticultural unit and pupils are involved in growing the food they eat.

Pre-testing, standardising and taste-testing recipes: Pre-testing the recipes saved time in the kitchen and allowed the cooks to experiment and perfect the dishes, which also increased their confidence. After pre-testing the recipes, pupils were encouraged to taste-test the new dishes.

Curriculum linkages: At Windlestone there is an emphasis on transferable skills to ensure that the healthy eating messages students receive can be translated into all aspects of their lives. Every key stage three pupil takes food technology classes and in key stage four it is a popular GCSE option. The students enjoy preparing food and regularly share the food they cook with staff and the head teacher. The school also has a horticultural unit and pupils are involved in growing the food they eat.

Key challenges for future
Encouraging the pupils to try new dishes: The pupils at Windlestone have always enjoyed traditional food. One challenge has been to encourage the pupils to eat oily fish. When it was put onto the menu as salmon en crouté, the pupils would not eat it, so the catering staff changed the name to 'fish pasties' and gave out small tasters. The pupils enjoyed it and now oily fish is a popular option. Vegetable topped muffins are a successful alternative to pizzas. Windlestone also has a Monitoring Officer who coaches the pupils and encourages them to try new foods. She is responsible for checking who is eating, and guiding the pupils' choices. The dietitian foresees that this will be less of a challenge in the future, as primary pupils will be more used to healthier school menus.



As in-house cooks, they can feel quite isolated. They also felt a need to develop a support network where they can share ideas.

Professional development and training of the cooks:

As in-house cooks, they can feel quite isolated. They also felt a need to develop a support network where they can share ideas – this would help to empower them and increase their confidence. As part of phase 3 of the pilot, the school is investigating a student (Junior Chef) placement from Darlington Further Education College. This would give the cooks an opportunity to develop new training skills and would also give them extra time in the kitchen to experiment with new ideas.

Nutritional analysis of recipes:

From the dietitian's perspective, it has been a challenge to meet the nutrient-based standard for iron. She has had to focus on including specific foods whilst ensuring that the menu does not become restrictive or repetitive and that basic menu principles (such as variety) are still adhered to. From the Bursar's perspective, it is important that the cooks do not become overburdened with administration and that data gathering requirements do not interfere with the quality of the food prepared.

Windlestone School 3-week compliant menu cycle

Week 1	Monday	Tuesday	Wednesday	Thursday	Friday
Meat, fish main course	Spaghetti bolognaise with wholemeal spaghetti (90)	Chunky beef casserole (90)	Roast Pork, stuffing, Yorkshire pudding and gravy (95)	Scotch broth with croutons (60)	Baked sausages (30)
	Tuna and kidney bean salad (10)				Minced beef with onions (70)
Vegetarian dishes including dairy option		Boiled egg salad (10)	Vegetable Kiev (5)	Vegetable topped muffins (40)	
Starchy food	Baked potato (10)	Baked Potato (10)	Mashed potato (100)	Bread buns (60)	Mashed potato (100)
	Garlic Bread (90)	Baby potatoes (90)			
Vegetables	Carrots (90)	Curly kale (90)	Broccoli (95)	Vegetables in Scotch Broth (60)	Peas (50)
			Salad (5)		Salad (40)
Accompaniments	Salad (25) and fresh bread available daily				
Desserts	Marshmallow Krispies (60)	Bread and butter pudding (60)	Fruit and custard (60)	Pear and chocolate sponge with Chocolate sauce (60)	Fruit scones (60)
Extra desserts	Fresh Fruit (20-80 portions), fruit yoghurt (30)				
Drinks	Water and semi-skimmed milk (50) freely available				

Week 2	Monday	Tuesday	Wednesday	Thursday	Friday
Meat, fish main course	Chicken curry with lentils (80)	Steak pie and gravy (80)	Roast lamb, Yorkshire pudding, mint sauce and gravy (90)	Beef stew (90)	Pork chop with onion gravy (40)
	Baked potato and tuna (7)	Salmon en croute (20)	Prawn salad (10)		Beef lasagne (60)
Vegetarian dishes including dairy option	Baked potato with baked beans (7) and cheese (6)			Vegetable topped muffins (10)	
Starchy food	Boiled rice (80)	Baby potatoes (20)	Baby potatoes (100)	Mashed potato (90)	Mashed potato (40)
		Mashed potatoes (80)			Garlic bread (60)
Vegetables	Peas (80)	Baked beans (80)	Curly kale (90)	Peas (90)	Carrots (50)
	Salad (20)	Salad (20)		Salad (10)	Green beans (50)
Accompaniments	Salad (25) and fresh bread available daily				
Desserts	Apricot Slice (60)	Dietitian's fruit cake (60)	Marshmallow Krispies (60)	Bran Gingerbread (60)	Apple and raisin sponge (60)
Extra desserts	Fresh Fruit (20-80 portions), fruit yoghurt (30)				
Drinks	Water and semi-skimmed milk (50) freely available				

() indicates the estimated provision mix

Week 3	Monday	Tuesday	Wednesday	Thursday	Friday
Meat, fish main course	Beef chilli (80)	Lamb and haricot bean casserole (30)	Roast beef, Yorkshire pudding and gravy (90)	Steak pie (70)	Spicy beef-burger (50)
	Prawn salad (20)	Chicken ratatouille (70)		Fish pie, potato topping (30)	
Vegetarian dishes including dairy option			Stuffed mushrooms (10)		Pizza (50)
Starchy food	Bread buns (20)	Pasta (70)	Baby potatoes (100)	Mashed potato (70)	Bread roll (50)
	Boiled rice (80)	Baked potato (30)			
Vegetables	Curly Kale (80)	Vegetables in chicken ratatouille (70)	Carrots (90)	Green beans (100)	Salad (100)
		Peas (30)	Salad (10)		
Accompaniments	Salad (25) and fresh bread available daily				
Desserts	Dietitians Fruit cake (60)	Rice Pudding with pureed fruit (60)	Bran Gingerbread (60)	Pear and chocolate sponge with chocolate sauce (60)	Flapjack (60)
Extra desserts	Fresh Fruit (20-80 portions), fruit yoghurt (20)				
Drinks	Water and semi-skimmed milk (50) freely available				

() indicates the estimated provision mix



Case study 6:

Heathside Secondary School, Weybridge, Surrey, in partnership with school catering provider Scolarest, part of Compass Group UK and Ireland.



Context

Description of the school, students and lunchtime provision

Heathside is a comprehensive Foundation Technology College for 11-18 year olds, affiliated to the Diocese of Guildford and located in Weybridge, Surrey. The school has actively engaged and involved students in a variety of healthy eating initiatives using a 'whole school approach' and obtained National Healthy Schools Status in 2006. The Principal, volunteered Heathside to participate in the pilot. He recognised the importance of the School Food Regulations and how they interlink with the Every Child Matters agenda, Healthy Schools programme, Education for Sustainable Development and Community Cohesion.

The school roll varied from 1,374 in 2006/07 to 1,431 in 2007/08. Lunch was provided on average for 336 students. The catering provider at Heathside is Scolarest, which is part of Compass Group, who provide catering services to primary and secondary schools, further and higher educational establishments.

Action taken by the catering provider to:

Promote school lunches: The caterer recognises the need to actively promote and market its services. Their specialist marketing team support the development of service offers through customer communication, surveys, assembly briefs, and the distribution of monthly central promotions. Schools are provided with a menu 'selector' which gives the on-site catering manager the flexibility to provide menus that meet customer needs whilst ensuring compliance with Government standards.

Catering managers are actively encouraged to carry out their own promotions, and a flexible tool kit is available to assist with the development of theme days and meal deals.

The caterer also promotes healthy eating through its 'putting fun back into food' campaign, which includes educational activities such as presentations at school assemblies, 'ready steady cook' style competitions, cookery classes for students and parents, taster days and special themed menu events. All members of the catering team also encourage young people to eat healthily and try new foods; this is an integral part of their job.



Enhance the training and qualifications of the school cooks:

In 2007, the catering company had the opportunity to put one of its trainee managers into Heathside. The new catering manager had followed the company's management development programme to progress from a chef to a catering manager. The catering manager displayed huge motivation, enthusiasm and good communication skills when dealing with everyone from colleagues to students and teachers.

The catering company also has a team of regional chefs who visit school teams and provide on-site craft skills training. An executive chef was on-site twice a week at the start of the pilot and then at least once a week thereafter. Training included main course production, understanding of new snacks (which comply with the food-based standards) and the development of live cooking at the servery.

It was vital for the catering team to have a good understanding of nutrition to support the effectiveness of the pilot, and all of the team had completed nutritional training. The catering company support the learning process through NVQ training, and all their front line employees complete an induction and receive training in food safety, health and safety, craft skills, service excellence, and nutrition.

Lunchtime provision at Heathside

A wide range of food and drink is offered from four different outlets. The main servery in the dining hall provides the full range, including the main meal of the day, 'grab and go' (such as pasta pots), a baked potato bar, salads, sandwiches, desserts and drinks. There are two additional serving hatches, one serves hot 'grab and go' options such as pizza, wraps and paninis and the other serves cold items like sandwiches. The fourth outlet is a wooden cabin located in the playground (open only during the summer) serving baked potatoes, soup and a range of sandwiches. In addition there are three vending machines: two provide drinks (milk shakes and water) and the third sells healthy snacks such as dried fruits and seeds these are accessible all day. The food and drink provision from vending machines were not included in the nutrient analysis, as after monitoring sales it was assessed they contributed very little to lunch time provision.

Dining facilities: The main dining room seats 85 students with an additional 55 seats available in the lower dining room. This presents a challenge as only 10% of the student population can be seated at any one time. To overcome this constraint, the lunch service is staggered with two 30-minute sittings, from 12.35–1:05 and 1:25–1:55.



It was vital for the catering team to have a good understanding of nutrition to support the effectiveness of the pilot, and all of the team had completed nutritional training.

Price of Meals: The free school meal (FSM) value at Heathside was £1.65 in 2006/07, increasing to £1.75 in September 2007. Free school meal students are entitled to spend their voucher on any of the lunch offers, and the caterer ensures that they are able to purchase a range of meal deals including a main meal and a dessert or drink.

The paid meal price increased in September 2007 in line with inflation and in direct proportion to the increase in FSM value. Debate took place during the school meetings regarding the price of meals and student feedback during the pilot indicated that price was still an issue. In response, the catering company introduced meal deals, which in effect provided a discount for students. In order to support and encourage the move to healthier eating habits, price increases were greater for menu items considered to be less healthy, which supported minimal increases for healthier options.

External competition: This is limited. Students can purchase food and drink on the way to school (the nearest shops are quarter of a mile away), but Heathside operates a stay-on-site policy for students in Year 7 to 11. The 6th formers will use the school dining room if they have access to the first lunch service, otherwise they tend to purchase their lunch off the school premises.

Pilot study

Working towards the nutrient-based standards using a whole school approach

From the outset the Principal maintained that any proposed changes to the lunch provision should be openly discussed and agreed with the students. Heathside has a 'healthy eating group' who had earlier in the year run a successful workshop for parents on healthy packed lunches. This group (mainly year 8 and 9 students) were invited to participate in the pilot 'working group' along with the school catering staff and teachers.

Each phase of the pilot at Heathside was implemented using a whole school approach. Regular meetings were held to ensure that all stakeholders were kept well informed of developments. The caterer's nutritionist provided feedback to the healthy eating group after each round of menu modifications, to ensure they were aware of the impact on the nutrient content of an average school lunch. Throughout the pilot, the Area Operations Manager met with a group of students on a regular basis to find out how the catering team's activities were being received.



The school and caterer requested a gradual approach with any modifications to the menu being phased in over time to avoid students walking away from the lunch service.

Menu analysis

The catering company operates a four-week menu cycle at Heathside. This was adapted to a three-week cycle for the purpose of the pilot (this approach was used in the other pilot schools to allow more rounds of menu modifications). The school and caterer requested a gradual approach with any modifications to the menu being phased in over time to avoid students walking away from the lunch service.

All the recipes used at Heathside are from the caterer. The company are continually developing standardised recipes that are tried and tested in a school environment and costed using a similar approach to that outlined in the School Food Trust step-by-step guide¹⁵.

Each recipe was analysed by the nutritionist using Dietplan 6, and NME sugars were computed manually using the standard methodology (see Technical notes). Nutrient data for each recipe was subsequently imported into the Nutmeg^{TM 16} menu planning and nutrient analysis software together with additional items including drinks and fruit, portion sizes and overall provision mix (the provision mix is based on production and a complete meal being chosen a main dish including starchy

food, vegetable, salad, dessert and drink). The proportional split of each menu item is estimated from figures submitted by the area managers based on actual sales data. Provision mix changed throughout the pilot the meal of the day increased from 10% pre-pilot to 22% in phase 5, both pizzas and pastas decreased from 30% pre-pilot to 22% in phase 5.

Phases of pilot

Pre-pilot: The pre-pilot menu complied with the final food-based standards. In practice this meant that for fruit and vegetables a portion for each student was accurately reflected in the provision mix. Nutritional analysis of the pre-pilot menu identified that it did not meet the nutrient-based standards for energy, iron, zinc, calcium and sodium.

Throughout the pilot students were invited to suggest ways of achieving the nutrient-based standards. One option was to focus on increasing the take up of main meals, another was the promotion of meal deals. The caterer was keen to work with the students to design 'grab and go' options as these would suit the relatively short lunch period, reduce queuing, allow students to participate in extra-curricula activities and enhance the viability of the lunch service by encouraging students to purchase more than one item.



Phase 1 (4–22 June): The team considered the provision mix (which is determined by the students' buying patterns) to identify the most appropriate opportunities for improving the nutritional profile of the menu. Main meals and milk drinks were promoted, and as a result standards for energy, zinc and calcium were met but NME sugars were no longer compliant (due to added sugar in the flavoured milk drinks), and also iron and sodium remained non compliant.

Phase 2 (5–23 November 2007): In this phase the nutritionist worked with the on-site catering team to look at improving the levels of iron, and reducing NME sugars and sodium. During the summer vacation ideas from the students and the catering team were used to choose recipes high in iron from the database. All recipes were tried and tested with the students at taster sessions before introduction to the main menu.

New recipes introduced for Phase 2 included vegetable toad-in-the-hole, bean goulash and lamb koftas in tomato sauce. Iron levels increased but did not achieve the standard. The promotion of milk drinks was not continued in Phase 2 subsequently the average school lunch was no longer compliant with the nutrient-based standard for calcium. Food-based standards for food other than lunch became mandatory in September 2007 and the removal of cakes and biscuits

from mid-morning break resulted in these items becoming more popular at lunchtime, thereby reducing the likelihood of students choosing a fruit or dairy-based dessert causing the NME sugars and sodium to remain too high.

Phase 3 (14 January–5 February 2008): Phase 3 focused on reducing the NME sugars and sodium and increasing the iron and calcium content of the overall provision by concentrating on the popular options. Wholemeal pasta was introduced and breads were replaced with wholemeal and wholegrain varieties. Hot vegetable accompaniments were promoted rather than salad. The portion size of milk drinks was increased but take up was low. These menu modifications increased iron to a compliant level, but NME sugars, calcium and sodium were still not compliant.

Phase 4 (25 March–25 April 2008): In this phase a meal deal offer which included a milk drink and a home bake was introduced, which meant the energy and calcium standard was achieved but sodium and NME sugars were not compliant. Fewer wholemeal pastas and breads were offered in this phase as a result of student feedback and to help reduce sodium levels. The increase in cakes and biscuits and adaptations to some further recipes maintained compliance with the iron standard. The catering manager made



Throughout the pilot students were invited to suggest ways of achieving the nutrient-based standards.

some minor recipe modifications such as using a mix of wholemeal and white flour for example incorporated 50% wholemeal flour in roasted vegetable toad in the hole, beef cobbler, bean goulash, and the addition of 10g per portion of green lentils into recipes such as Quorn and vegetable hotpot and Caribbean fruit curry. Brown rice was included as an accompaniment with chilli con carne, vegetable chilli, lamb koftas and salmon wrap. Sodium levels continued to increase.

Phase 5 (12 May–6 June 2008):

In this phase the catering company engaged with their suppliers to reduce the sodium content of popular items such as pizza bases and toppings, these were successfully trialled. Student feedback on taste, texture and quality of lower sodium pizza selections was positive this was supported by similar sale patterns. Cake and biscuit recipes higher in iron and lower in sugar and sodium were selected from the database and used also the overall percentage of cakes and biscuits were reduced in favour of other dessert options.

At the start of the pilot, the 3-week menu cycle was compliant with 9 of the 14 nutrient standards. By the end of phase five the catering team and the school had met the compliance levels on all 14 nutrient standards.

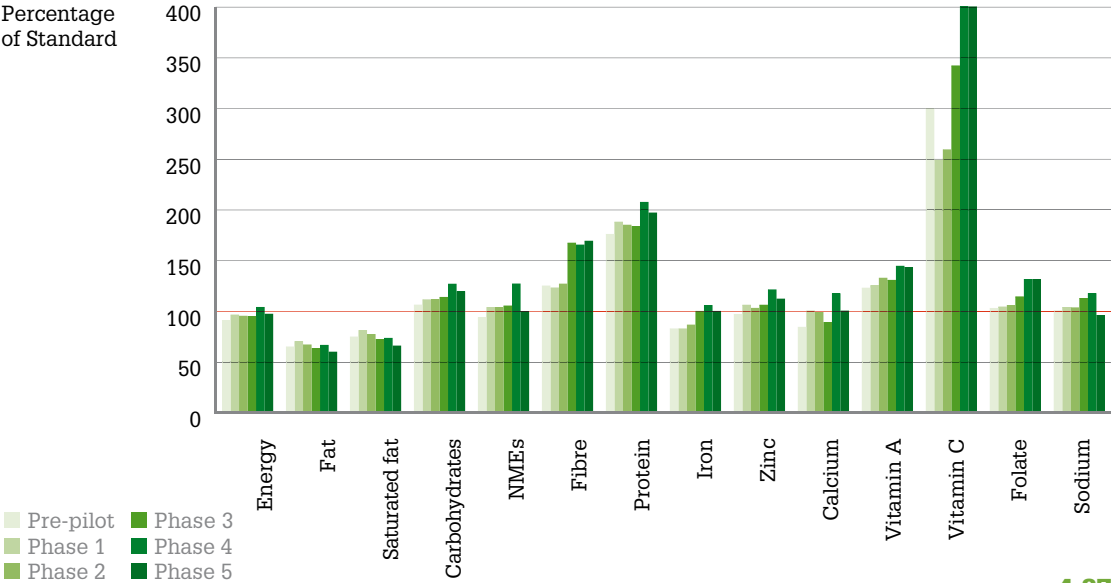
The nutrient analyses of the pre-pilot menu and each individual phase of menu modifications are presented on page 4.87. The 3-week compliant menu cycle is shown on pages 4.91 to 4.93.

Heathside: Nutrient analysis of pre-pilot and the individual phases of menu modifications

Nutrient	Max. /Min.	%	Nutrient standard	Pre Pilot		Phase 1 (Jun 2007)		Phase 2 (Nov 2007)		Phase 3 (Jan 2008)		Phase 4 (Feb 2008)		Phase 5 (Apr 2008)	
				Nutrient	Standard met	Nutrient	Standard met	Nutrient	Standard met	Nutrient	Standard met	Nutrient	Standard met	Nutrient	Standard met
Energy	EAR*	30	646± 32.3	587	✗	623	✓	615	✓	612	✗	671	✓	628	✓
Fat (g)	Max	35	25.1	16.3	✓	17.6	✓	16.8	✓	15.9	✓	16.7	✓	15.0	✓
Sat fat(g)	Max	11	7.9	5.9	✓	6.4	✓	6.1	✓	5.7	✓	5.8	✓	5.2	✓
Carbohydrate (g)	Min	50	86.1	91.4	✓	95.9	✓	96.1	✓	98.0	✓	109.2	✓	102.8	✓
NMES (g)	Max	11	18.9	17.7	✓	19.6	✗	19.6	✗	19.9	✗	24.0	✗	18.8	✓
Fibre (g)	Min	30	5.2	6.5	✓	6.4	✓	6.6	✓	8.7	✓	8.6	✓	8.8	✓
Protein (g)	Min	30	13.3	23.4	✓	25.0	✓	24.6	✓	24.4	✓	27.6	✓	26.2	✓
Iron (mg)	Min	35	5.2	4.3	✗	4.3	✗	4.5	✗	5.2	✓	5.5	✓	5.2	✓
Zinc mg	Min	35	3.3	3.2	✗	3.5	✓	3.4	✓	3.5	✓	4.0	✓	3.7	✓
Calcium (mg)	Min	35	350	295	✗	351	✓	346	✗	311	✗	411	✓	351	✓
Vitamin A (µg)	Min	35	245	301	✓	307	✓	325	✓	320	✓	354	✓	351	✓
Vitamin C (mg)	Min	35	14.0	42.0	✓	34.9	✓	36.3	✓	47.9	✓	56.1	✓	64.7	✓
Folate (µg)	Min	35	70	72	✓	73	✓	74	✓	80	✓	92	✓	92	✓
Sodium (mg)	Max	30	714	718	✗	741	✗	739	✗	805	✗	839	✗	685	✓

* Estimated Average Requirement

Heathside:
Nutrient analysis of pre-pilot and the individual phases of menu modifications





Evaluation of the pilot study

Impact on staff hours:

Throughout the pilot the catering manager introduced new working schedules in the kitchen area. This was to ensure that additional support was given in production of the main meal offer, which focused on freshly prepared food. To promote the new menus themed days and 'tasters' were run with assistance from a member of the executive chef team. Additional support from the Area Operational Manager was also vital in obtaining timely feedback from students and to proactively work with the school to develop menus, promotional calendar and agree provision mix with the catering manager. Staff training also impacted on hours worked.

Impact on kitchen equipment/facilities: The menu modification had no impact on the kitchen as this had adequate equipment, storage space and facilities to prepare and store food.

Cost of menu modifications:

An overall increased cost to the caterer of the menu was mainly attributed to product substitutions for example the introduction of wholemeal pasta increased the cost of the pasta pots. Staff training needs such as craft skills, customer care and nutritional training also increased costs. These increased costs were not reflected in the meal price.

Investment in marketing strategy:

A significant amount of support was given to the pilot through the caterer's central marketing team in the development of promotional material i.e. posters that advertised meal deals and parent flyers.

Impact on take up: Overall take up of school lunches was maintained throughout the pilot. Main meal take up increased a little throughout the pilot, mainly due to the success of the theme days. Take up of hot 'grab and go' items remained consistent. Sales of the bread offer also remained consistent although white bread was removed, and take-up of smoothies increased. Pasta sales dropped in the first week of the 2nd phase due to the introduction of wholemeal pasta but recovered by the final week of that phase as the students became familiar and accepted the new product.



The catering company has introduced a 'Junior Master Chef' 2-month programme in conjunction with the school's food technology team, to teach cooking skills and further encourage healthy eating.

Key to success/good practice

Whole school approach: With an aim to promote life-long learning of healthy food and nutrient awareness, the senior management of the school raised the profile of the pilot by setting it in the context of the national educational initiatives of Healthy Schools, Every Child Matters, Sustainable Schools and Community Cohesion. The senior management team concentrated on engaging directly with stakeholders, particularly the students and the caterers, thus ensuring greater commitment to the success of the pilot. The Assistant Principal, member of the senior management team responsible for Personal Development and Wellbeing, and co-ordinator of the pilot said *'to achieve the nutrient standards, it is vital to establish trust through a formal but candid dialogue between the school and caterer. To move forward effectively there has to be mutual understanding of the challenges – whether they are commercial, educational or personal – facing each stakeholder'*

Student engagement: This was the key to the success of the Heathside pilot. The students were involved at every stage of the menu modification, which was of paramount importance as it provided the students with an appreciation of nutrient-based standards and an understanding of why changes had to be made.

In recognition of the importance of student involvement, the catering company has introduced a 'Junior Master Chef' 2-month programme in conjunction with the school's food technology team, to teach cooking skills and further encourage healthy eating.

Communication and evaluation:

From the outset, regular meetings enabled clear open communication between the critical stakeholders, particularly between the school and catering company, enabling a mutual and trusting partnership to be established in which challenges and successes could be shared. By constantly informing students (in assemblies) and the wider community (through newsletters), about the reasons for the various menu modifications and the impact on the nutrient value of lunch provision, their engagement was maintained and the profile of the pilot enhanced. At critical moments, internal evaluations of progress were made and these were communicated to the relevant stakeholders. Such evaluation helped to value contributors, maintained engagement and identified clear priorities for the next stages.

Key challenges for the future

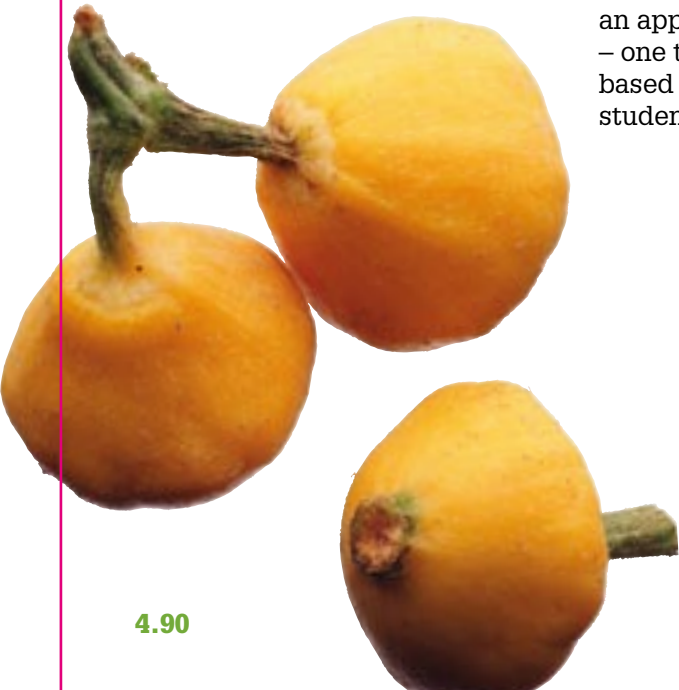
Strengthening partnership:

The school, and particularly the students will need to continue to maintain and develop their partnership with the catering team to find workable solutions to maintain compliance with the nutrient-based standards. To maintain momentum it will be essential to implement a sustainable mechanism for regular student dialogue.

Balancing student preference and nutrient density: The key challenge for the catering provider is to retain and even enhance the existing customer base whilst providing meals that meet the nutrient-based standards, and at the same time deliver a business model that is commercially viable. It is evident from the pilot that it is important to achieve an appropriate provision mix – one that meets the nutrient-based standards and satisfies students' requirements and

preferences. The caterer's central menu development team will continue to work with the school to trial new recipes to further increase micronutrient density. From the school's perspective a future consideration would be an investment in a cashless payment system, which could assist students in the selection of a nutritionally balanced meal by providing them nutritional information on meal deals.

Product development: The caterer will work with its suppliers to modify products. Recognising that there is a close relationship between food provision, product presentation and the eating environment, the school will be working with their caterer to capture and develop a concept of eating that is both healthy and attractive to students in a secondary school. As part of this process the caterer will also be introducing a deli and smoothie bar for students with a particular focus on sixth formers; recognising that this customer base is particularly receptive to such offers.



Heathside Secondary School

3-week compliant menu cycle

Week 1	Monday	Tuesday	Wednesday	Thursday	Friday
Main meals	Chilli con carne served with fluffy brown rice (16)	Calypso chicken served with pasta spirals (16)	Roast beef served with roast or mashed potato (16)	Moussaka served with tomato and herb bread wedge (16)	Oven Baked Battered Cod Portion with Chips or Plain Jacket Wedges (16)
Vegetarian	Fresh vegetable mornay bake with champ mashed potato (6)	Chickpea aloo ghobi served with pilau rice (6)	Roasted vegetable toad in the hole served with roast or mashed potatoes (6)	Spicy bean and vegetable wrap with herb baked potato wedges (6)	Quorn and Vegetable Layer Pie with Chips or Plain Jacket Wedges (6)
Vegetable/salad accompaniments	Golden sweetcorn (37) or seasonal salad (25)	Baked beans (33) or seasonal salad (25)	Sliced green beans (37) or seasonal salad (25)	Fresh stir-fried vegetables (37) or seasonal salad (25)	Garden Peas (37) or Seasonal Salad (25)
Extra bread	Fresh bread available daily				
Hot desserts	Dorset apple cake with warm vanilla sauce (8) or fresh fruit pieces (20)	Fruit fool (8) or fresh fruit pieces (20)	Rhubarb and ginger pudding with custard (8) or fresh fruit pieces (20)	Chocolate-orange fudge cake (8) or fresh fruit pieces (20)	Toffee Apple Oat Crumble with Custard (8) or fresh fruit pieces (20)
Grab and Go	Pizza selection (22) Pasta offer (½ wholemeal) (22)	Pizza selection (22) Pasta offer (½ wholemeal) (22)	Pizza selection (22) Pasta offer (½ wholemeal) (22)	Pizza selection (22) Pasta offer (½ wholemeal) (22)	Pizza Selection (22) Pasta Offer (½ wholemeal) (22)
	Singapore pork with noodles (3)	Beef cobbler with mashed potato (3)	Turkey stir fry with noodles (3)	Vegetarian Swiss cottage pie (3)	Spicy Jambalaya (3)
	Jacket potato topped with hot and cold fillings (6) Soup and bread (5)	Jacket potato topped with hot and cold fillings (6) Soup and bread (5)	Jacket potato topped with hot and cold fillings (6) Soup and bread (5)	Jacket potato topped with hot and cold fillings (6) Soup and bread (5)	Jacket potato topped with hot and cold fillings (6) Soup and bread (5)
	Range of sandwiches and salads (20)	Range of sandwiches and salads (20)	Range of sandwiches and salads (20)	Range of sandwiches and salads (20)	Range of sandwiches and salads (20)
Additional desserts/ drinks	Yoghurt (9), jelly and dairy dessert pots (8), water (15), fruit juices (58) smoothie (6) and milk drinks (21)	Yoghurt (9), jelly and dairy dessert pots (8), water (15), fruit juices (58) smoothie (6) and milk drinks (21)	Yoghurt (9), jelly and dairy dessert pots (8), water (15), fruit juices (58) smoothie (6) and milk drinks (21)	Yoghurt (9), jelly and dairy dessert pots (8), water (15), fruit juices (58) smoothie (6) and milk drinks (21)	Yoghurt (9), jelly and dairy dessert pots (8), water (15), fruit juices (58) smoothie (6) and milk drinks (21)
	Cakes and biscuits (55)	Cakes and biscuits (55)	Cakes and biscuits (55)	Cakes and biscuits (55)	Cakes and biscuits (55)

() indicates the estimated provision mix

Week 2	Monday	Tuesday	Wednesday	Thursday	Friday
Main meals	Lamb pilaff with brown rice (16)	Beef bolognaise with pasta spirals (16)	Roast chicken with roast potatoes or plain jacket wedge (16)	Beef cobbler with creamy mashed potatoes (16)	Salmon wrap with chips or brown rice (16)
Vegetarian	Vegetable pita pockets with Cajun wedges (6)	Fruit Caribbean curry with pilau rice (6)	Roasted vegetable lasagne with garlic bread slice (6)	Quorn, potato and leek pie (6)	Vegetable chilli with brown rice (6)
Vegetable/salad accompaniments	Peas (37) or seasonal salad (25)	Golden sweetcorn (37) or seasonal salad (25)	Fresh broccoli florets (37) or seasonal salad (25)	Fresh carrot slices (37) or seasonal salad (25)	Baked beans (37) or seasonal salad (25)
Extra bread	Fresh bread available daily				
Hot desserts	Mixed fruit pie with custard (8) or fresh fruit pieces (20)	Warm carrot cake with vanilla sauce (8) or fresh fruit pieces (20)	Chocolate & orange mousse (8) or fresh fruit pieces (20)	Peach conde (8) or fresh fruit pieces (20)	Sultana sponge with custard (8) or fresh fruit pieces (20)
Grab and Go	Pizza selection (22) Pasta offer (½ wholemeal) (22)	Pizza selection (22) Pasta offer (½ wholemeal) (22)	Pizza selection (22) Pasta offer (½ wholemeal) (22)	Pizza selection (22) Pasta offer (½ wholemeal) (22)	Pizza selection (22) Pasta offer (½ wholemeal) (22)
	Chicken Jalfrezi curry with pilau rice (3)	Lamb koftas with brown rice (3)	Oriental turkey stir-fry with egg noodles (3)	Vegetable toad in the hole with mashed potatoes (3)	Singapore pork with noodles (3)
	Jacket potato topped with hot and cold fillings (6) Soup and bread (5)	Jacket potato topped with hot and cold fillings (6) Soup and bread (5)	Jacket potato topped with hot and cold fillings (6) Soup and bread (5)	Jacket potato topped with hot and cold fillings (6) Soup and bread (5)	Jacket potato topped with hot and cold fillings (6) Soup and bread (5)
	Range of sandwiches and salads (20)	Range of sandwiches and salads (20)	Range of sandwiches and salads (20)	Range of sandwiches and salads (20)	Range of sandwiches and salads (20)
Additional desserts/drinks	Yoghurt (9), jelly and dairy dessert pots, (8), water (15), fruit juices (58) smoothie (6) and milk drinks (21)	Yoghurt (9), jelly and dairy dessert pots (8), water (15), fruit juices (58) smoothie (6) and milk drinks (21)	Yoghurt (9), jelly and dairy dessert pots (8), water (15), fruit juices (58) smoothie (6) and milk drinks (21)	Yoghurt (9), jelly and dairy dessert pots (8), water (15), fruit juices (58) smoothie (6) and milk drinks (21)	Yoghurt (9), jelly and dairy dessert pots (8), water (15), fruit juices (58) smoothie (6) and milk drinks (21)
	Cakes and biscuits (55)	Cakes and biscuits (55)	Cakes and biscuits (55)	Cakes and biscuits (55)	Cakes and biscuits (55)

() indicates the estimated provision mix

Week 3	Monday	Tuesday	Wednesday	Thursday	Friday
Main meals	Country beef hot pot with mashed potatoes (16)	Lamb koftas in tomato sauce with pasta spirals (16)	Roast turkey with roast or mashed potatoes (16)	Savoury mince and vegetables with boiled potatoes (16)	Oven baked wholemeal breaded cod portion with chips or jacket potato halves (16)
Vegetarian	Quorn and vegetable chow-mein (6)	Bean goulash with pasta spirals (6)	Vegetable Swiss baked cottage pie (6)	Creamy vegetable korma with pilau rice (6)	Quorn and vegetable hot pot (6)
Vegetable/salad accompaniments	Golden sweetcorn (37) or seasonal salad (25)	Baked beans (37) or seasonal salad (25)	Broccoli florets (37) or seasonal salad (25)	Sliced fresh carrots (37) or seasonal salad (25)	Garden peas (37) or seasonal salad (25)
Extra bread	Fresh bread available daily				
Hot desserts	Crunchy mixed fruit crumble with custard (8) or fresh fruit pieces (20)	Mandarin conde (8) or fresh fruit pieces (20)	Apple and cinnamon strudle with custard (8) or fresh fruit pieces (20)	Chocolate bread & butter pudding with chocolate sauce (8) or fresh fruit pieces (20)	Pineapple upside-down pudding with custard (8) or fresh fruit pieces (20)
Grab and Go	Pizza selection (22) Pasta offer (½ wholemeal) (22)	Pizza selection (22) Pasta offer (½ wholemeal) (22)	Pizza selection (22) Pasta offer (½ wholemeal) (22)	Pizza selection (22) Pasta offer (½ wholemeal) (22)	Pizza selection (22) Pasta offer (½ wholemeal) (22)
	Chicken jalfrezi with pilau rice (3)	Caribbean fruit curry with brown rice (3)	Oriental turkey stir-fry with noodles (3)	Vegetable bolognese (3)	Sweet and sour chicken with brown rice (3)
	Jacket potato topped with hot and cold fillings (6) Soup and bread (5)	Jacket potato topped with hot and cold fillings (6) Soup and bread (5)	Jacket potato topped with hot and cold fillings (6) Soup and bread (5)	Jacket potato topped with hot and cold fillings (6) Soup and bread (5)	Jacket potato topped with hot and cold fillings (6) Soup and bread (5)
	Range of sandwiches and salads (20)	Range of sandwiches and salads (20)	Range of sandwiches and salads (20)	Range of sandwiches and salads (20)	Range of sandwiches and salads (20)
Additional desserts/drinks	Yoghurt (9), jelly and dairy dessert pots (8), water (15), fruit juices (58) smoothie (6) and milk drinks (21)	Yoghurt (9), jelly and dairy dessert pots (8), water (15), fruit juices (58) smoothie (6) and milk drinks (21)	Yoghurt (9), jelly and dairy dessert pots (8), water (15), fruit juices (58) smoothie (6) and milk drinks (21)	Yoghurt (9), jelly and dairy dessert pots (8), water (15), fruit juices (58) smoothie (6) and milk drinks (21)	Yoghurt (9), jelly and dairy dessert pots (8), water (15), fruit juices (58) smoothie (6) and milk drinks (21)
	Cakes and biscuits (55)	Cakes and biscuits (55)	Cakes and biscuits (55)	Cakes and biscuits (55)	Cakes and biscuits (55)

() indicates the estimated provision mix

5. Technical notes

Technical notes

Estimated Average Requirement (EAR)



This is the average amount of energy or nutrients needed by a group of people. Half the population will have needs greater than this amount and half will have needs below this amount.

Reference Nutrient Intake (RNI)



This is the amount of a nutrient which is enough to meet the dietary requirements of about 97% of a group of people.

This section provides additional information on how the nutrient-based standards were derived and how they should be applied.

Table 1. Nutrient-based standards for primary and secondary schools

	Nutrient	Min/Max	Proportion of recommended daily intake of nutrients	Nutrient value of an average school lunch	
				Primary	Secondary
	Energy (kJ) (kcal)	EAR	30% ± 5%	2215 ± 111 530 ± 26.5	2700 ± 135 646 ± 32.3
Macronutrients	Carbohydrate (g)	Min	50% food energy	70.6	86.1
	Non-milk extrinsic (NME) sugars (g)	Max	11% food energy	15.5	18.9
	Fat (g)	Max	35% food energy	20.6	25.1
	Saturated fat (g)	Max	11% food energy	6.5	7.9
	Protein (g)	Min	30% RNI	7.5	13.3
	Fibre (g)	Min	30% calculated reference value	4.2	5.2
Micronutrients	Sodium (mg)	Max	30% SACN recommendation	499	714
	Vitamin A (µg)	Min	35% RNI	175	245
	Vitamin C (mg)	Min	35% RNI	10.5	14.0
	Folate (µg)	Min	35% RNI	53	70
	Calcium (mg)	Min	35% RNI	193	350
	Iron (mg)	Min	35% RNI	3.0	5.2
	Zinc (mg)	Min	35% RNI	2.5	3.3

RNI = Reference Nutrient Intake
EAR = Estimated Average Requirement
SACN = Scientific Advisory Committee on Nutrition

How the values for the nutrient-based standards were derived

The nutrient-based standards are based on current UK nutrient recommendations (Dietary Reference Values⁴; Salt and Health⁵). The Dietary Reference Values specify the amounts of energy and nutrients needed by groups of people.

For children and young people, it is an established principle of nutritional guidance that for a given age-sex group, nutrient-based standards should be based on the requirements of those children with the greatest need. The principle of greatest need, however, applies only to vitamins and minerals other than sodium. In England, it has not been applied to energy, macronutrients or sodium because this would promote overconsumption of these nutrients for the majority of individuals, which can be harmful.

The values for energy, macronutrients and sodium (Table 1, red text), have been calculated based on the breakdown of the following age distribution (Edubase for England 2006) assuming an equal number of boys and girls:

- Primary:
40% 4–6 yrs, 60% 7–10 yrs
- Secondary:
70% 11–14 yrs, 30% 15–18 yrs

The values for micronutrients, excluding sodium (Table 1, blue text), have been calculated for children with the greatest nutritional need and applied to the whole school population:

- Primary all micronutrients:
boys and girls aged 7–10
- Secondary vitamin A:
boys 15–18 years
- Secondary vitamin C:
boys and girls 15–18 years
- Secondary folate:
boys and girls aged 11–18 years
- Secondary calcium:
boys 11–18 years
- Secondary iron:
girls 11–18 years
- Secondary zinc:
boys 15–18 years

See Appendix 3 for details of Dietary Reference Values and Salt and Health recommendations for school age children (for the nutrients specified in the nutrient-based standards).

Single sex secondary schools

The nutrient values in Table 1 are appropriate for mixed sex primary and secondary schools. However, there are sufficiently large differences in the energy and nutrient requirements of girls and boys aged 11–18 years to warrant different sets of values for single sex secondary schools. For example, the value for energy (Table 1), if applied to a girls' secondary school, would exceed their likely average requirements. If food were provided at this level, it would effectively either promote obesity or necessitate waste. Conversely, the energy provision currently stipulated would not meet the average requirement for boys. The table below shows the nutrient-based standards for single sex girls' and boys' secondary schools.

Table 2. Nutrient-based standards for single sex secondary schools

	Nutrient	Min/ Max	Proportion of recommended daily intake of nutrients	Nutrient value of an average school lunch	
				Secondary girls	Secondary boys
Macronutrients	Energy (kJ) (kcal)	EAR	30% ± 5%	2412 ± 121 577 ± 28.9	2985 ± 149 714 ± 35.7
	Carbohydrate (g)	Min	50% food energy	77.0	95.2
	Non-milk extrinsic (NME) sugars (g)	Max	11% food energy	16.9	20.9
	Fat (g)	Max	35% food energy	22.5	27.8
	Saturated fat (g)	Max	11% food energy	7.1	8.7
	Protein (g)	Min	30% RNI	12.7	13.8
	Fibre (g)	Min	30% calculated reference value	4.6	5.7
	Sodium (mg)	Max	30% SACN recommendation	714	714
	Vitamin A (µg)	Min	35% RNI	210	245
	Vitamin C (mg)	Min	35% RNI	14.0	14.0
Micronutrients	Folate (µg)	Min	35% RNI	70	70
	Calcium (mg)	Min	35% RNI	280	350
	Iron (mg)	Min	35% RNI	5.2	4.0
	Zinc (mg)	Min	35% RNI	3.2	3.3

RNI = Reference Nutrient Intake
EAR = Estimated Average Requirement
SACN = Scientific Advisory Committee on Nutrition

Special schools and Pupil Referral Units providing both primary and secondary education

The regulations¹ state that ‘where a maintained special school or a pupil referral unit provides both primary and secondary education, a school lunch provided to a junior pupil must comply with the requirements for primary schools; and a school lunch provided to a senior pupil must comply with the requirements for secondary schools’.

In practice, the different nutritional requirement for primary and secondary pupils would be met by varying the portion sizes served.

For the purposes of analysis, schools can calculate values for nutrient-based standards taking into account the age distribution, so that only one analysis has to be carried out.

Example:

For a mixed sex special school or PRU with 30% primary age pupils and 70% secondary age pupils:

Using values from Table 1

Energy:

Primary standard = 530 kcal

Secondary standard = 646 kcal

Therefore, the standard for that school would be:

$$(530 \times 0.30) + (646 \times 0.70) = 611 \text{ kcal}$$

Calcium:

Primary standard = 193 mg

Secondary standard = 350 mg

Therefore, the standard for that school would be:

$$(193 \times 0.30) + (350 \times 0.70) = 303 \text{ mg}$$

Infant, Junior and Middle Schools

The nutrient values in Table 1 are appropriate for mixed sex primary and secondary schools. There are other schools for which these values may not be appropriate. These include infant, junior and middle schools*. It is important for schools to cater appropriately for the age range of their pupils, and to ensure that the standards against which menus are assessed closely match the nutritional requirements of their pupils. If the age of pupils in a school differs from primary and secondary, then it is more appropriate to use the values in Table 3 to work out the nutrient requirement for that school. Here is an example of how to do this.

Example:

For a mixed sex middle school with pupils aged between 7–14 (school years 3–10) with 50% aged between 7–10 years (school years 3–6) and 50% aged between 11–14 years (school years 7–10)

Using values from Table 3

Energy:

Aged 7–10 (school years 3–6)

value = 557 kcal

Aged 11–14 (school years 7–10)

value = 610 kcal

Therefore, the standard for that school would be:

$$(557 \times 0.50) + (610 \times 0.50) = 583.5 \text{ kcal}$$

Iron:

Aged 7–10 (school years 3–6)

value = 3.0 mg

Aged 11–14 (school years 7–10)

value = 5.2 mg

Therefore, the standard for that school would be:

$$(3.0 \times 0.50) + (5.2 \times 0.50) = 4.1 \text{ mg}$$

* Middle deemed primary schools should comply with the nutrient-based standards by September 2008 and middle deemed secondary schools by September 2009.

Table 3: Nutrient-based standards for ages 4–6, 7–10 and 11–14

	Nutrient	Min/ Max	Proportion of recommended daily intake of nutrients	Nutrient value of an average school lunch		
				Aged 4–6	Aged 7–10	Aged 11–14
				School years R,1,2	School years 3,4,5,6	School years 7,8,9,10
Macronutrients	Energy (kJ) (kcal)	EAR	30% ± 5%	2043 ± 102 489 ± 24.5	2328 ± 116.4 557 ± 27.9	2549 ± 127.4 610 ± 30.5
	Carbohydrate (g)	Min	50% food energy	65.2	74.2	81.3
	Non-milk extrinsic (NME) sugars (g)	Max	11% food energy	14.3	16.3	17.9
	Fat (g)	Max	35% food energy	19.0	21.6	23.7
	Saturated fat (g)	Max	11% food energy	6.0	6.8	7.5
	Protein (g)	Min	30% RNI	5.9	8.5	12.5
	Fibre (g)	Min	30% calculated reference value	3.9	4.5	4.9
Micronutrients	Sodium (mg)	Max	30% SACN recommendation	357	595	714
	Vitamin A (µg)	Min	35% RNI	140	175	210
	Vitamin C (mg)	Min	35% RNI	10.5	10.5	12.3
	Folate (µg)	Min	35% RNI	35	53	70
	Calcium (mg)	Min	35% RNI	158	193	350
	Iron (mg)	Min	35% RNI	2.1	3.0	5.2
	Zinc (mg)	Min	35% RNI	2.3	2.5	3.2

RNI = Reference Nutrient Intake
EAR = Estimated Average Requirement
SACN = Scientific Advisory Committee on Nutrition

How to calculate an average school lunch

Menu Cycle



A plan of menus for school lunches at a school or group of schools lasting for no less than one and no more than four consecutive weeks during a term.

Bread



Bread provided as part of a meal should be included in the nutrient analysis. The extra bread (without added fat or oil), available on an unrestricted basis to meet the needs of children with greater energy requirements should not be included in the nutrient analysis. The rationale for bread to be available as an extra is to encourage pupils to fill up on carbohydrate rather than high fat, high sugar foods.

The regulations¹ state 'The average school lunch for a school or a group of schools must be calculated by totalling the amounts of energy and nutrients provided by all school lunches in a menu cycle, and then dividing that total by the estimated number of school lunches served to individual pupils during that menu cycle'.

To achieve this in practice, you will need to enter details of all food and drink items provided in your menu cycle into the menu planning and nutrient analysis software, together with portion sizes. This will include recipes for food prepared from scratch and any product specifications for bought in items if they are not already present in the software's food composition database. Remember to include all food (except extra bread – see guidance in box) and drinks (see guidance in box on page 5.9) provided at all school food outlets at lunchtime. These may include hot meals counter, sandwich counter, deli/salad bar, milk bar, vending machines, and any other food or drink outlets on the school premises at lunchtime.

School lunch is defined as food provided for consumption by pupils as their midday meal. If some of the food and drink provided at mid-morning break is considered to be part of lunchtime provision it should be included when calculating an average school lunch.

Estimate your provision mix. For each food and drink item, estimate the number of portions you plan to provide during the menu cycle. Depending on which software you use, you may need to enter the number of portions or convert this into a percentage of total provision. The software can then total all the nutrients provided at lunchtime over the menu cycle.

To determine the nutrient value of an average school lunch, divide this total by the estimated number of school lunches you expect to provide over the menu cycle. For further information on defining a school lunch see page 5.9.

Fruit and vegetables



Remember, for the lunch provision to be compliant with the food-based standard for fruit and vegetables at least one portion of fruit and one portion of vegetables or salad must be provided per pupil per day. In practice, this means that you should include a portion of vegetables or salad and a portion of fruit for each pupil in the nutrient analysis. Fruit can be provided as fresh fruit, fruit juice, or as part of a fruit-based dessert.

Vegetables can be provided as portions of vegetables or included in main dishes (e.g. vegetable curry or lasagne).

Although the standards apply to planned provision it is good practice to check if there is a difference between planned and actual provision. If the difference is relatively minor (e.g. a delivery may not arrive on time and a substitute has to be made), it is likely that the actual provision will still be compliant with the standards. This will almost certainly be the case if the planned provision was well above the minimum standards or well below the maximum standards.

While the standards apply to provision and not consumption, the aim is for pupils to eat healthily at lunchtime. For this to happen, one of the key aims of the school catering service must be to minimise the difference between provision and consumption. This makes sense from both a health and an economic standpoint. Good marketing of healthy food options, pre-ordering and meal deals should help to achieve this.

Check the difference between provision and consumption (measured on sales). If the differences are substantial, consider the reasons why. If circumstances are likely to recur (e.g. ongoing promotion of meal deals) adjust your planned provision mix for the next menu cycle.

Defining a school lunch

Bottled water



If the till receipts for bottled water are included in lunchtime sales, this will literally 'dilute' the nutritional value of the provision by increasing the apparent number of meals sold. For this reason, subtract the value of bottled water sales from the total lunch sales when calculating the number of lunches provided. Remember that free, fresh drinking water should be provided at all times in preference to bottled water.

Primary schools

Most of the food is provided as complete meals i.e. main dish, vegetable, dessert and drink. Therefore:

Number of lunches provided in primary schools =

Reported number of meals served (including those paid for plus free school meals)

Secondary schools

Defining a secondary lunch is more complex than a primary school lunch because there is more choice, a variety of outlets, different serving times, the type of food or combination of food is often not recorded in detail, and the number of 'meal equivalents' is not clearly definable.

Two pieces of information all caterers can provide are:

- total income (all till receipts) from lunchtime sales and
- the price of a free school meal (FSM) i.e. its monetary value in the dining room.

This information can be used to estimate the number of lunches provided. Add together the till receipts for a given period for all sales of food to which the school lunch standards have been applied. This may include sales of food at mid-morning break that are deemed to be part of the lunchtime provision. Divide this total by the value of a free school meal. Add the number of FSM provided.

Number of lunches provided in secondary schools =

$$\frac{\text{Total income from lunchtime sales}}{\text{FSM value}} + \text{Total number of FSM provided}$$

Technical considerations of recipe/product analysis

Accurate analysis of the nutrient content of an average school lunch will depend on good recipe calculations. This can only be achieved using standard recipes and understanding the strengths and weaknesses of the available nutrient databases*. More information is available in the Trust's 'Calculating the nutrient content of school lunch recipes' (reference). The following information summarises good practice when undertaking recipe and menu analyses.

Standard recipes

Standard recipes are written instructions for producing a consistent quantity and quality dish. Exact quantity, quality and cost of each ingredient are recorded along with a clear methodology. Standard recipes should contain the following: descriptive title of food item; number of portions; portion size; metric measurement of each ingredient; ingredient details; price per unit and calculation of price for quantity used in recipe; total cost and cost per portion; detailed instructions for preparation and service.

Incomplete nutritional information

Missing food ingredients

Some recipe ingredients may not be listed in the database(s) supplied. In these cases it will be necessary to ask the food manufacturer or wholesaler for the nutrition information, or find a similar product that can be substituted for the original ingredient.

New food ingredients or products

Data from wholesalers or food manufacturers can be used to create a profile for new food ingredients or products.

Missing nutrients

Values for all the nutrients that are required for analysis of school lunches may not be available. It may be necessary to estimate a missing value by comparing to a similar item which has been analysed, or using a value from a different nutrient database. It is advisable to take a conservative approach to an estimated value, to identify that it is an estimate, and note how this estimate was determined. It may be necessary to avoid a brand name in the naming of this product on your database, as it is unlikely to be a true reflection of the brand's nutritional profile.

* There are a number of commonly used nutrient databases. In the UK the most widely used is McCance and Widdowson's The Composition of Foods (6th Edition)¹¹. Most menu planning and nutrient analysis software packages contain this database, and often include additional databases from other countries and those supplied by food wholesalers or manufacturers. For more information visit the Food Standards Agency website at www.food.gov.uk/science/dietarysurveys/dietsurveys

Fibre

The standard for fibre is based on non-starch polysaccharides (NSP). NSP information for many foods and products is detailed in McCance and Widdowson's The Composition of Foods (6th edition)¹¹. However, fibre information stated on food labels is likely to be based on the Association of Official Analytical Chemists (AOAC) method. AOAC values are generally higher than NSP values. If NSP values are unavailable it will be necessary to estimate these values from the AOAC value based on knowledge of the food product, similar products and the comparison table in McCance and Widdowson's The Composition of Foods (6th edition)¹¹, which details NSP and AOAC fibre values per 100g. The conversion factor of 0.75 may be used to convert AOAC values to NSP.

NME sugars

NME sugars cannot be quantified by analytical techniques, but need to be calculated based on the food type. The most commonly used definition of NME sugars is:

'All sugars in fruit juices, table sugar, honey, sucrose, glucose and glucose syrups added to food plus 50% of the sugars in canned, stewed, dried and preserved fruits⁶.'

The NME sugar values for individual food items are not generally available on nutrient databases. However, some information on the NME sugar content of food items is available in electronic format, on request, from the Food Standards Agency. To request, please email: **NUT-A-ENQUIRIES@foodstandards.gsi.gov.uk**

Cooking losses/gains

The cooking process may result in changes in water and/or nutrient content of food or dishes. When carrying out recipe analysis it is important to take these into account and analyse recipes as cooked.

Water loss/gain

Some food may lose a significant amount of water on cooking (e.g. meat). The amount lost will depend on the method. Other food items such as pasta, rice and lentils will gain weight on cooking. It is important that these weight changes are taken into account when carrying out recipe/menu analysis. Details regarding weight changes in individual food items can be found in McCance and Widdowson's *The Composition of Foods* (6th edition)¹¹.

Weight changes in recipes will be more difficult to calculate, but may be significant. This can be determined by totalling ingredient weights and weighing the cooked product. If this is not possible, use a weight change value from a similar recipe in McCance and Widdowson's *The Composition of Foods* (6th edition)¹¹.

Vitamin retention

Most nutrient databases will include details of cooked food items (e.g. vegetables) which will take into account the vitamin losses on cooking. When carrying out recipe analysis it is likely that vitamin loss will need to be considered. Details on typical vitamin losses for particular food groups can be found in McCance and Widdowson's *The Composition of Foods* (6th edition)¹¹. It is important to consider the preparation methods, cooking and holding times of food items/dishes cooked at your school to determine the appropriateness of these estimated vitamin losses.

More information on these considerations is available in the British Dietetic Association Toolkit¹² and in the School Food Trust's independent reviews of menu planning and nutrient analysis software¹⁶.

6. Appendix

Appendix

Appendix 1

Final food-based standards

Appendix 2

Updated list and definition of drinks permitted in schools in England

Appendix 3

Dietary Reference Values (DRV) for the nutrients specified in the nutrient-based standards

Scientific Advisory Committee on Nutrition (SACN) recommendations

Key to symbols

-  food or food groups that must be provided
-  food or food groups where the frequency or amount provided is restricted
-  food or food groups that are no longer allowed

Appendix 1

Final food-based standards

These are the final food-based standards which will also need to be met when the nutrient-based standards are adopted.

Food/food groups		Final food-based standards for school lunches from 2008 (primary) and 2009 (secondary)	Food-based standards for school food other than lunches from 2007
 Fruit and vegetables		Not less than two portions per day per pupil must be provided; at least one should be vegetables or salad and at least one should be fruit	Fruit and/or vegetables must be available in all school food outlets
 Oily fish		Oily fish such as mackerel or salmon must be provided at least once every three weeks	No standard
 Meat products		A meat product (manufactured or homemade) from each of the four groups below may be provided no more than once per fortnight across the school day, providing the meat product also meets the standards for minimum meat content and does not contain any prohibited offal*: Group 1: Burger, hamburger, chopped meat, corned meat; Group 2: Sausage, sausage meat, link, chipolata, luncheon meat; Group 3: Individual meat pie, meat pudding, Melton Mowbray pie, game pie, Scottish (or Scotch) pie, pasty or pastie, bridie, sausage roll; Group 4: Any other shaped or coated meat product	
 Starchy food cooked in fat or oil		Starchy food cooked in fat or oil should not be provided more than three times a week across the school day	
 Bread		Bread with no added fat or oil must be provided on a daily basis	No standard
 Deep-fried food – restricted		No more than two deep-fried food items, such as chips and batter-coated products, in a single week across the school day	
 Salt and condiments – restricted		No salt shall be available to add to food after the cooking process is complete. Salt shall not be provided at tables or service counters	
		Condiments, such as ketchup and mayonnaise, may only be available in sachets or in individual portions of not more than 10g or 1 teaspoonful	

* Meat Products (England) Regulations 2003 www.opsi.gov.uk/si/si2003/20032075.htm

Food/food groups		Final food-based standards for school lunches from 2008 (primary) and 2009 (secondary)	Food-based standards for school food other than lunches from 2007
 Snacks – restricted	●	Snacks such as crisps must not be provided. Nuts,** seeds, vegetables and fruit with no added salt, sugar or fat are allowed. Dried fruit may contain up to 0.5% vegetable oil as a glazing agent	
	●	Savoury crackers and breadsticks can only be served with fruit, vegetables or dairy food as part of school lunch	Savoury crackers and breadsticks must not be provided
 No Confectionery	●	Confectionery such as chocolate bars, chocolate-coated biscuits and sweets must not be provided	
 Cakes and biscuits restricted	●	Cakes and biscuits are allowed at lunchtime but must not contain any confectionery	Cakes and biscuits must not be provided
 Drinking water	●	Free, fresh drinking water should be provided at all times	
 Healthier drinks	●	The only drinks permitted during the school day are plain water (still or sparkling); low fat milk, or lactose-reduced milk; fruit juice; vegetable juice; plain soya, rice, or oat drinks enriched with calcium; plain fermented milk (e.g. yoghurt) drinks; combination drinks; flavoured low fat milk. Please see the drinks table in Appendix 2 for guidance on composition, ingredients, additives and flavourings Tea, coffee and hot chocolate containing less than 5% added sugars or honey are also permitted. Note: The School Food Trust strongly encourages schools to provide drinks that are unsweetened, unfortified and additive free, and is currently developing a voluntary Code of Practice to support this	

** Be aware of nut allergies. Always refer back to the school and catering policies regarding nuts. Many schools are finding that cases of allergies from peanuts (as well as milk and eggs) are on the increase. The Anaphylaxis Campaign states that even the most extreme form of allergy – anaphylaxis – is manageable in schools and cross contamination can be significantly lowered by washing hands with soap after eating and handling nuts. We recommend you visit the www.allergyinschools.co.uk website for accurate, reliable information on managing allergies in schools.

Appendix 2

Updated list and definition of drinks permitted in schools in England
Interpreting SI 2007 No. 2359 Education, England: The Education (Nutritional Standards and Requirements for School Food) (England) Regulations 2007

Plain drinks											
Drink category	Description	Volume	Preservatives	Antioxidants Added to prevent oxidation/ discolouration)	Stabilisers	Flavourings	Colourings	Others	Sugars or honey (Added for the purpose of sweetening)	Artificial sweeteners	Fortificants (Added minerals and vitamins for the purpose of fortification)
Water (still or carbonated)	Water (unsweetened unflavoured)	100% water	No	No	No	No	No	No	No	No	No
	Low fat milk (or lactose reduced)	100% milk	No	No	No	No	No	No	No	No	No
Plain (unsweetened, unflavoured) soya, rice or oat drink	Plain (unsweetened, unflavoured) soya, rice or oat drink enriched with calcium	No regulation	No	No	No	No	No	No	No	No	Yes (Calcium)
Plain fermented milk drinks	Plain fermented milk e.g. yoghurt drink	100% yoghurt	No	No	No	No	No	No	No	No	No
Fruit juice or Vegetable juice	Fruit juice (unsweetened/ not fortified) ^{††} Fruit juice from concentrate (unsweetened/ not fortified) ^{††}	100% plain fermented milk drink	No	Yes as permitted in Schedule 7 SI 1995 No. 3187 The Miscellaneous Food Additives Regulations 1995 [†] detailed on page 6.5: All fruit juices: E300 ascorbic acid E330 citric acid; Pineapple juice: E296 malic acid Grape juice: E170 calcium carbonate and E336 potassium tartrates	Yes as permitted in Schedule 7 SI 1995 No. 3187 The Miscellaneous Food Additives Regulations 1995 [†] detailed on page 6.5: Passion Fruit juice Pineapple juice: E440 Pectins	No	No	Yes as permitted in Schedule 3 SI 1995 No. 3187 The Miscellaneous Food Additives Regulations 1995 [†] detailed on page 6.5: Pineapple Juice: E900 dimethyl- polysiloxane	No Note: As permitted in Schedule 3 paragraph 3 (a) 2003 SI No. 1564 The Fruit Juices and Fruit Nectars (England) Regulations 2003 ^{††} Sugar may be added for the purpose of regulating acidic taste, in an amount (expressed as dry matter) not exceeding 15g per litre of the juice in fruit juice, other than any prepared from grapes or pears.	No	No

Combination drinks											
Drink category	Description	Volume	Preservatives	Antioxidants Added to prevent oxidation/ discolouration)	Stabilisers	Flavourings	Colourings	Others	Sugars or honey (Added for the purpose of sweetening)	Artificial sweeteners	Fortificants (Added minerals and vitamins for the purpose of fortification)
Fruit or vegetable juice combined with water (still or carbonated)	Combination of fruit juice and water (still or carbonated)	≥50% fruit or vegetable juice		This type of combination drink is classified as a 'non-alcoholic flavoured drink' under EU law and is allowed to contain the additives and flavourings as specified by Council Directive 89/107/EEC and Council Directive 88/388/EEC.					No	Yes ^{††}	Yes
Fruit or vegetable juice and: milk (low fat or lactose reduced) or plain fermented milk drink e.g. yoghurt or plain soya, rice or oat drink	Combinations of fruit or vegetable juice and: milk (low fat or lactose reduced) or plain fermented milk drink e.g. yoghurt or plain soya, rice or oat-based drink with or without plain water (still or carbonated)	≥50% milk (low fat, or lactose reduced), plain fermented milk drink, or plain soya, rice or oat-based drink	This type of combination drink is classified as a 'non-alcoholic flavoured drink' under EU law and is allowed to contain the additives and flavourings as specified by Council Directive 89/107/EEC and Council Directive 88/388/EEC.						Yes <5% added sugar or honey to the milk component of the drink	Yes ^{††}	Yes
Cocoa and: milk (low fat or lactose reduced) or plain fermented milk drink e.g. yoghurt, or plain soya, rice or oat drink	Combinations of cocoa and: milk (low fat or lactose reduced) or plain fermented milk drink e.g. yoghurt or plain soya, rice or oat drink with or without plain water (still or carbonated)	≥50% milk (low fat or lactose reduced), plain fermented milk or plain soya, rice or oat drink	This type of combination drink is classified as a 'non-alcoholic flavoured drink' under EU law and is allowed to contain the additives and flavourings as specified by Council Directive 89/107/EEC and Council Directive 88/388/EEC.			No ^{†††}	Yes ^{††}		Yes <5% added sugar or honey to the milk component of the drink	Yes ^{††}	Yes
Flavoured milk	Flavoured milk (low fat or lactose- reduced) containing not less than 90% milk by volume or plain soya, rice or oat drink	≥90% milk (low fat or lactose reduced) or plain soya, rice or oat drink	This type of combination drink is classified as a 'non-alcoholic flavoured drink' under EU law and is allowed to contain the additives and flavourings as specified by Council Directive 89/107/EEC and Council Directive 88/388/EEC.						Yes <5% added sugar or honey to the milk component of the drink	Yes ^{†††}	Yes

[†] 1995 SI No. 3187 The Miscellaneous Food Additives Regulations 1995: 'as amended in relation to England by SI 1997/1413, SI 1999/1136, SI 2000/3323, SI 2001/60, SI 2001/2294, SI 2001/3442, SI 2001/3775, SI 2002/379, SI 2003/1008, SI 2003/1563, SI 2003/1564, SI 2003/1596, SI 2003/1659, SI 2003/2243, SI 2003/3120, SI 2003/3295, SI 2004/2601 and SI 2005/1099

^{††} 2003 SI No. 1564 The Fruit Juices and Fruit Nectars (England) Regulations 2003 www.opsi.gov.uk/SI/si2003/20031564.htm

^{†††} The Statutory Instrument 1995 No. 3124 the Colours in Food Regulations 1995 Schedule 2

^{††††} SI 2008 No.1317 Food, England The Drinking Milk (England) Regulations 2008: www.opsi.gov.uk/si/si2008/uksi_20081317_en_1

Appendix 3

Dietary Reference Values (DRVs) for the nutrients specified in the nutrient-based standards

Nutrient	DRV	4–6 years		7–10 years		11–14 years		15–18 years	
		M	F	M	F	M	F	M	F
Energy (kcal)	EAR	1715	1545	1970	1740	2220	1845	2755	2110
Carbohydrate (g)	Not less than 50% of food energy from carbohydrates								
Non-milk extrinsic (NME) sugars (g)	Not more than 11% food energy from NMEs								
Fat (g)	Not more than 35% food energy from fat								
Saturated fat (g)	Not more than 11% food energy from saturated fat								
Protein (g)	RNI	19.7	19.7	28.3	28.3	42.1	41.2	55.2	45.0
Fibre (g)*	CRV	13.7	12.4	15.8	14.0	17.8	14.8	180**	16.9
Vitamin A (µg)	RNI	400	400	500	500	600	600	700	600
Vitamin C (mg)	RNI	30	30	30	30	35	35	40	40
Folate (µg)	RNI	100	100	150	150	200	200	200	200
Calcium (mg)	RNI	450	450	550	550	1000	800	1000	800
Iron (mg)	RNI	6.1	6.1	8.7	8.7	11.3	14.8	11.3	14.8
Zinc (mg)	RNI	6.5	6.5	7.0	7.0	9.0	9.0	9.5	7.0

* Calculated Reference Value (CRV) has been calculated pragmatically as 8g per 1000 kcal (CWT, 2005).

** This has been capped at a maximum of 18g in line with recommendations for adults (SMRP, 2005)

Scientific Advisory Committee on Nutrition (SACN) recommendations

Nutrient	4–6 years	7–10 years	11 years and over
Salt (g)	3.0	5.0	6.0
Sodium (g)	1.2	2.0	2.4
Sodium (mg)	1200	2000	2400

To convert sodium to salt, multiply by 2.5.

To convert salt to sodium, divide by 2.5.

N.B. the nutrient-based standard for sodium was calculated using a more precise method based on the atomic weights of sodium and chloride, the components of salt.

7. References and resources

References

1. The Education (Nutritional Standards and Requirements for School Food) (England) Regulations 2007 (SI 2007/2359) as amended by the Education (Nutritional Standards and Requirements for School Food) (England) (Amendment) Regulations 2008 (SI 2008/1800).
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3. School Meals Review Panel (2005). Turning the Tables: Transforming School Food. Main Report www.dcsf.gov.uk/consultations/conResults.cfm?consultationId=1319
4. Department of Health (1991). Report on Health and Social Subjects No.41. Dietary Reference Values for Food Energy and Nutrients for the United Kingdom. HMSO, London.
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8. Food Standards Agency (2006). UK Target Nutrient Specifications (TNS) for Manufactured foods used in School Meals.
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10. National Governor's Association and Food Standards Agency (2007). Food Policy in Schools A Strategic Policy Framework for Governing Bodies Revised September 2007.
11. Food Standards Agency (2002). McCance and Widdowson's The Composition of Foods, Sixth summary edition. Cambridge: Royal Society of Chemistry.
www.food.gov.uk/science/dietarysurveys/dietsurveys



12. British Dietetic Association (2006). Delivering nutritional care through food and beverage services: A toolkit for dietitians.
13. Food in Schools for Parents A short guide for parents and carers
www.teachernet.gov.uk/publications
14. Boaden D., French C., Bacon P. (2008) Report on the development of secondary school lunch recipes with increased iron content
www.schoolfoodtrust.org.uk/ironenrichedrecipes
15. Step-by-step guide to calculating the nutritional composition of school lunch recipes
www.schoolfoodtrust.org.uk/UploadDocs/Contents/Documents/step_by_step_nutrient_calculation_guide.pdf
16. Independent Review of Menu Planning and Nutrient Analysis Software
www.schoolfoodtrust.org.uk/softwarereview
17. British seasonal food chart
www.schoolfoodtrust.org.uk/resources/seasonalitychart
18. The Food Standards Agency (FSA) 'Eatwell' plate
www.eatwell.gov.uk/healthydiet/eatwellplate/
19. The School Lunch Grant 2008-2011
www.schoolfoodtrust.org.uk/UploadDocs/Contents/Documents/schoollunchgrant2008funding_note.pdf
20. Food Standards Agency new salt targets for 2010
www.food.gov.uk/healthiereating/salt

Where to find additional information



The **School Food Trust (SFT)** is a non-departmental public body which was established in 2005 by the Department for Children Schools and Families (DCSF) formerly known as the Department for Education and Skills (DfES) to help introduce the new standards for school food, develop food skills amongst children and young people and bring longer term improvements to their health and education. Whilst the School Food Trust works closely with DCSF, it is an independent organisation providing information, advice and guidance for all involved in school food. This guide can be downloaded at: www.schoolfoodtrust.org.uk

School Food Trust resources:

A (revised) guide to the Government's new food-based standards for school lunches

www.schoolfoodtrust.org.uk/resources/2007b

A guide to introducing the Government's new food-based standards for school food other than lunch

www.schoolfoodtrust.org.uk/resources/2007a

A fresh look at the school meal experience: looks at how schools can involve the whole school community to make improvements to the look and feel of their dining hall, manage lunchtimes effectively, reduce queuing and improve behaviour.

www.schoolfoodtrust.org.uk/resources/mealexperience

School Food Check List: provides a quick and effortless way to find out whether your lunch and non-lunch food provision complies with the food-based standards.

www.schoolfoodtrust.org.uk/checklist

Cakes and biscuits: some suggestions for products to replace cakes and biscuits as a mid-morning snack.

www.schoolfoodtrust.org.uk/mid-morningsnacks

Menu planning and nutrient analysis software: Independent reviews of menu planning and nutrient analysis software packages.

www.schoolfoodtrust.org.uk/softwarereview

A fresh look at vending: Developed as a practical guide which aims to answer questions you might have about vending and to clarify how to make your service work for you.

www.schoolfoodtrust.org.uk/vending

Case studies: A collection of case studies that provide lessons learnt and shared experiences in transforming school food through a whole school approach.

www.schoolfoodtrust.org.uk/casestudy-home.asp

Other key agencies involved in transforming school food

The **Department for Children Schools and Families (DCSF)**

www.dcsf.gov.uk sets the standards for school food and is responsible for the legislation. The Statutory Instrument 2007 No. 2359 Education, England: The Education (Nutritional Standards and Requirements for School Food) (England) Regulations 2007 can be downloaded at www.opsi.gov.uk/si/si2007/uksi_20072359_en.pdf

The **Department of Health's** aim is to improve the health and wellbeing of people in England www.dh.gov.uk The **Healthy Schools Programme** is a joint **Department of Health (DH)** and DCSF initiative. Its 2005 guidance on the criteria for Healthy Schools 'A Guide for Schools' explains the requirements for healthy eating which schools must meet to achieve Healthy Schools Status (see www.wiredforhealth.gov.uk). These include meeting the school food standards and having a whole school approach to healthy eating, which covers all aspects of eating and learning about food, as well as the meals themselves. See the Food in Schools Toolkit at: www.foodinschools.org

The **Food Standards Agency (FSA)** is an independent Government department set up in 2000 to protect the public's health and consumer interests in relation to food. The FSA provides advice to DCSF on scientific and technical aspects including food safety, nutrition and diet www.food.gov.uk It has produced voluntary **Target Nutrient Specifications (TNS)** to be revised in 2008 which set maximum levels for total fat, saturated fat, sodium/salt and sugar for a range of manufactured food used in school meals, including bread, pizza, poultry products, soups, sausages and burgers. For further details see www.food.gov.uk/multimedia/pdfs/tns2006.pdf. The website 'Eat well, be well' has practical advice about healthy eating, understanding food labels and how what we eat can affect our health. www.eatwell.gov.uk. The FSA specific advice on salt can be downloaded from www.salt.gov.uk/babies_and_children.html





The **National Governor's Association** is the representative body for school governors in England. They have produced a revised version of Food Policy in Schools – A strategic policy framework for governing bodies, with the Food Standards Agency for governors about school food and meeting the food standards. This can be downloaded from www.food.gov.uk/healthiereating/nutritionschools/schoolgovernors

Local Authority Caterers Association (LACA) is a professional body representing 1,000 catering managers and suppliers who provide catering services to all sectors of Local Authorities.
www.laca.co.uk

The **Food for Life Partnership** is a Big Lottery funded programme, led by the **Soil Association**, to transform food culture in schools and communities across England with the combined expertise of the **Focus on Food Campaign**, **Garden Organic** and the **Health Education Trust**. The Food for Life Partnership aims to make school meals fresh, local and organic and use practical food education such as growing, cooking and farm links to reconnect young people to the food they eat.
www.foodforlife.org.uk

Nutritional Advice

British Nutrition Foundation is a scientific and educational charity which promotes the wellbeing of society through the impartial interpretation and effective dissemination of evidence-based nutritional knowledge and advice.
www.nutrition.org.uk

The **Caroline Walker Trust** has produced detailed guidance entitled 'Eating Well at School' that deals with nutrient-based standards for school food, including after school meals and snacks with sample menus for ideas.
www.cwt.org.uk

Health Education Trust is a UK registered charity, formed to promote the development of health education for young people in the UK.
www.healthedtrust.com

Professional support. Use the following websites to find registered professionals in your area.
www.dietitiansunlimited.co.uk
www.nutrition society.org.uk/membership/register

Sustain The alliance for better food and farming advocates food and agricultural policies and practices.
www.sustainweb.org

Special Dietary Needs

Allergy UK is a leading national medical charity providing up to date information on all aspects of allergy, food intolerance and chemical sensitivity.
www.allergyuk.org

The **Anaphylaxis Campaign**. Allergy in Schools is an advisory website on how to manage allergies in schools.
www.allergyinschools.org.uk

B-eat (Beating eating disorders) Information and help on all aspects of eating disorders, including Anorexia Nervosa, Bulimia Nervosa, binge eating disorder and related eating disorders.
www.b-eat.co.uk

Coeliac UK aims to improve the lives of people living with the condition through support, campaigning and research.
www.coeliac.co.uk

Diabetes UK is the largest organisation in the UK working for people with diabetes, funding research, campaigning and helping people live with the condition.
www.diabetes.org.uk

Young Minds is the national charity committed to improving the mental health of all children and young people.
www.youngminds.org.uk

The **Vegan Society** provides an explanation and advice on vegan lifestyles.
www.vegansociety.com

The **Vegetarian Society** is an educational charity promoting understanding and respect for vegetarian lifestyles. They offer free advice and information on a variety of issues.
www.vegsoc.org



Funding

Details on Funding for School Meals from 2008-2011 (as part of the School Funding Settlement) www.teachernet.gov.uk/management/schoolfunding/schoolfunding2008to11/schoolfundingsettlement200811/

Funding books and websites: where to find other places of support with funding to improve school food.
www.schoolfoodtrust.org.uk/fundingbooksandwebsites

Grants for healthy food activities: a list of opportunities for funding.
www.schoolfoodtrust.org.uk/grantsforhealthyfoodactivities

Procurement

The **DCSF** has published guidance on how to vary, or in extreme cases, end contracts with firms that cannot or will not provide healthier food.
www.teachernet.gov.uk/docbank/index.cfm?id=9793

Advice from **Defra** on the Public Sector Food Procurement Initiative www.defra.gov.uk/farm/policy/sustain/procurement/pdf/unlocking-opps.pdf. For buyers and non-procurement professionals, practical guidance and templates to help you procure catering services and food from wholesalers and producers www.defra.gov.uk/farm/policy/sustain/procurement/tools.htm

National Procurement Strategy for Local Government. Information on finding more effective, prudent and innovative ways of procuring services.
www.communities.gov.uk/localgovernment/efficiencybetter/nationalprocurementprogramme/nationalprocurementstrategy/

Teachernet provides a summary of some of the key areas around the procurement of school food.
www.teachernet.gov.uk/wholeschool/healthyliving/foodanddrink/procuringmeals/

Training

LACA are involved with furthering the education and development of those engaged in the provision of catering services within Local Authorities and the general enhancement of the profession.

www.laca.co.uk

People 1st aims to provide the environment which enables employers within the hospitality and catering sector to have the right number of people with the right skills and qualifications.

www.people1st.co.uk

The School FEAST network aims to support everyone involved in school meal provision by providing access to training and qualifications.

www.schoolfeast.co.uk

Training for cooks: Information on qualifications for cooks.

www.schoolfoodtrust.org.uk/training

Training Development Agency has a framework designed to help school leaders and support staff to identify the appropriate training and development.

www.tda.gov.uk/support/careerdevframework.aspx

UK Skills passport has been developed by People 1st and Sector Skills Council for Hospitality and Catering, to identify appropriate training and development opportunities for those within the hospitality and catering sector.

www.ukskillspassport.co.uk

