



Newham Universal Free School Meals Evaluation and Report

15 March 2018

Newham London


Newham
Clinical Commissioning Group

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1.0 FOREWORD

The following report details a mixed methods evaluation of the provision of Universal Free School Meals in the London Borough of Newham. We consider update of free school meals across the borough as well as several quantitative and qualitative factors including nutritional data and information about school level meal provision.

2.0 ACKNOWLEDGEMENTS

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The authors wish to acknowledge the support of members of staff from Newham Council and Juniper Ventures, in particular Michael Hales (Director – Juniper Ventures) and Peter Sawula (Juniper Ventures) for their valuable time and input in supporting the process of data collection for the production of this report.

3.0 INTRODUCTION

The focus on the nutritional composition of foods for school aged children should be oriented towards supporting their growth and educational attainment at school. Consumption of unhealthy food at this life stage could compromise their nutritional status and thereby their growth and development. These unhealthy foods can have a negative impact on weight management in children, leading to further weight gain as adults. Therefore, special attention must be placed on the nutritional quality of each meal in order to ensure children obtain the nutrients they need for optimal health.

School lunch is a pivotal meal in every child's day. It presents an opportunity for children to receive part of their daily nutritional requirements and may also serve as an opportunity to receive a nutritious meal that will enhance their learning. Due to the rising levels of obesity, it is also important for children to eat healthy food at school and to learn about healthy eating in order to make informed choices at home and in their communities.

Schools play an important role in providing nutritious food to their pupils. In England, there has been notable progress in school meal provision. In recent years, the type and quality of the food offered in schools has undergone dramatic changes and now reflects a more varied diet to support children's nutritional requirements. Several initiatives, such as Jamie Oliver's 2004 'Feed Me Better' campaign and the Channel 4 documentary 'Jamie's School Food', have promoted positive changes by shifting focus to the quality of food provided in schools.

Funding

Newham is one of few boroughs in London, apart from Islington and Southwark, to fund universal free school meals to all primary school children. Support for school meal provision forms part of Newham's Mayor Sir Robin Wales promise to provide continual support for the local community. It is estimated that provision of free school meals saves each household an average of £500 per child (Newham Council, 2018).

Initial Impact of Free School Meals

The London Borough of Newham was one of the pilot areas for universal free school meal provision. Since the initial reporting of findings following implementation of the pilot in 2009, this is the first report to evaluate school meal provision in Newham. The pilot's findings demonstrated that free school meal provision has a significant impact on pupils. Results demonstrated that there were improvements in behaviour, as well as increases in both concentration and educational attainment (Department for Education, 2013). However, changes in classroom behaviour were not quantitatively assessed and were anecdotally reported by school staff.

During the two-year pilot there was no evidence of reduction in children's BMI (Department for Education, 2013). However, it was observed that school meal provision had an impact on healthy eating habits at home, with some parents reporting that children were more willing to try new healthy foods at home after the implementation of free school meals (Department for Education, 2013). Thus, demonstrating the wider impact of school meals on healthy behaviour implementation.

Aims and Objectives

The aim of this report is to provide an updated evaluation of the school meal provision in primary and secondary schools in Newham.

The objectives for this evaluation are:

- To analyse the school food menus in primary and secondary schools;
- To observe how food is served in six primary schools and two secondary schools;
- To assess the portion guide education manual for staff serving food;
- To collect and analyse information on breakfasts served;
- To collect and analyse information on certifications used (ie. organic);
- To collect and analyse information on value added events;
- To assess the correlation between school meal provision and educational attainment and perform an economic evaluation.

Methods

The approach for data collection included a mixed-methods study, consisting of desk-based research and observational research. Desk-based research involved a literature review to collate the most recent evidence in the field of school meal provision and the correlation to educational attainment and obesity through an analysis of the School Food Standards.

In order to gain an understanding of school meal provision in Newham, we made contact with the main catering provider in Newham, *Juniper Ventures*. The primary school and secondary school menus were analysed by the catering provider for their nutritional content. Additionally, the catering provider produced supporting documentation relating to nutrition activities such as portion guides, breakfast club provision, organic food costs and nutrition education sessions.

Observations are deemed as the gold standard for assessing school nutrition environment (McPherson et al, 2000). Thus, in order to further understand school nutrition environment, six primary schools and two secondary schools were visited to observe practices in relation to healthy eating.

The limitations of this research include the impracticality of observing food provision in all primary school and secondary schools within the borough. Additionally, due to secondary caterers outside of *Juniper Ventures* providing school meals to some primary schools, it was not possible to analyse their nutritional data. Due to time constraints it was also not possible to collect feedback from children and parents in regard to school meal provision.

Literature Review

A poor diet leading to micronutrient deficiencies can have a significant impact on the physical, mental and social aspects of child health (Kristjansson et al, 2007). Therefore, it is hypothesized that the effects of a poor diet will result in adverse effects on children's school performance, including their educational attainment and behavior.

There is a dearth of research in developing countries analyzing the effects of school feeding programmes and their effect on dietary intake, educational attainment and behaviour (Waling et al, 2016). However, a recent systematic review (Martin et al, 2018) found that implementing lifestyle interventions targeting nutrition knowledge in addition to modifying the food offered in schools can have a positive impact on educational attainment in children with obesity. However, it was also found that including nutrient rich

food instead of replacing packed lunches did not have an impact on reading and math skills in children with obesity (Martin et al, 2018). The authors suggest this null result could be due to methodological weaknesses rather than intervention design (Martin et al, 2018). Additionally, this review only looked at children identified as overweight and did not include universal school feeding programmes, therefore it was not possible to assess the effects of the intervention on the entire school population.

In an earlier systematic review, nine studies from high-income countries looked at the impact of school feeding programmes on health and educational outcomes (Kristjansson et al, 2007). However, only one study analysed lunch as the main meal in the intervention (Tidsall, 1951). The other studies analysed the effect of breakfast, snacks, or milk on health and educational outcomes.

In a more recent randomised control trial in Denmark, children in the intervention group received a school lunch meal and children in the control group received standard care, consisting of a packed lunch (Andersen et al, 2014). This study demonstrated that designing a nutritionally appropriate meal to reflect the nutritional requirements of children led to an increased intake of important nutrients, such as iodine and zinc, and a reduction of saturated fat intake (Andersen et al, 2014).

The study also detected an increase in fish and vegetable intake. However, the authors of the study questioned if the 3-8% increase in micronutrient intake was sufficient to realistically impact child health and whether this would have long-term impacts (Andersen et al, 2014). Nevertheless, the study demonstrated that well designed menus for school feeding programmes have the potential to control nutrient intake with potential positive effects on child health, particularly in children that may not be receiving these types of food at home.

There have also been some trials analyzing the overall effects of nutritional interventions as well as the dining room environment in its' effect on behaviour. A Sheffield based intervention looking at food provision and changing the dining environment in primary schools found an increased level of alertness following the intervention (Golley et al, 2010). This effect was also observed in secondary schools which were randomly allocated to receive a tailored action plan and support to modify their food provision and dining environment over a 15-week period (Storey et al, 2011).

Other studies have also demonstrated that implementing school lunch provision has an impact on reading and math skills (Sorensen et al, 2015). Despite increasing skills in these two subject areas, there was a lack of significance in the impact of lunch provision on cognitive performance (Sorensen et al, 2015). However, this study found similar results to the systematic review by Martin et al. 2018, demonstrating that intervening at a nutritional level results in an impact on skills which could later impact educational attainment. This finding was also reflected in the initial impact report from the universal free school meal in Newham, where there was increased attainment in the first two years of the pilot (Department for Education, 2013).

Despite the lack of evidence to support a positive association between school lunch provision and health and educational outcomes, some studies have demonstrated that input in this area can lead to improved dietary intake and thereby improved nutritional status and improvements in behavior and educational skills.

National School Food Standards

Provision of school meals is governed by the *School Standards and Framework Act* (1998) Section 114A, which requires the provision of food and drink to comply with nutritional standards known as the *School*

School Meal Evaluation, Newham 2018

Food Standards. The new school food standards came into force in January 2015, as shown below. They are applicable to maintained local authority schools, new free schools and academies.

The Children's Food Trust, the charity that developed the school food standards closed in September 2017. Despite no charity no longer existing, these are the standards that were applicable at the time of writing and no further standards were found to supersede these.

"The first national school food standards were rolled out from 2006 to 2009. In July 2013, an independent review called the School Food Plan recommended that government create a clearer set of standards, accompanied by practical guidance, that:

- Provided caterers with a framework on which to build interesting, creative and nutritionally-balanced menus;
- Was less burdensome and operationally cheaper to implement than the previous standards.

These new school food standards were announced in June 2014 and came into force from January 2015. We helped develop and test them with schools and caterers."

Children's Food Trust (2017)

With clearer standard and practical guidance, the *Schools Food Standards* are there to ensure children develop healthy eating habits as part of their school day. The overall responsibility for school food provision is the school's governing board. They must ensure that food provision meets the *School Foods Standards*, as demonstrated in *Figure 1*.



The School Food Standards

Eating in school should be a pleasurable experience; time spent sharing good food with peers and teachers.

These school food standards are intended to help children develop healthy eating habits and ensure that they get the energy and nutrition they need across the whole school day. It is just as important to cook food that looks good and tastes delicious; to talk to children about what is on offer and encourage them to try; to reduce queuing; and to serve the food in a pleasant environment where they can eat with their friends.

As a general principle, it is important to provide a wide range of foods across the week. Variety is key – whether it is different fruits, vegetables, grains, pulses or types of meat and fish. Children love to hear the stories behind their food. Use fresh, sustainable and locally-sourced ingredients (best of all, from the school vegetable garden), and talk to them about what they are eating. Go to www.schoolfoodplan.com/news to find examples of what other schools are doing to encourage children to eat well.

Buying foods in line with the Government Buying Standards will help reduce salt, saturated fat and sugar, and increase fruit, vegetable and fibre content.

* This Standard applies across the whole school day, including breakfasts, morning breaks, tuck shops, and after school clubs



Fruit and vegetables

- One or more portions of vegetables or salad as an accompaniment every day
- One or more portions of fruit every day
- A dessert containing at least 50% fruit two or more times each week
- At least three different fruits and three different vegetables each week



Foods high in fat, sugar and salt

- No more than two portions of food that has been deep-fried, batter-coated, or breadcrumb-coated, each week*
- No more than two portions of food which include pastry each week*
- No snacks, except nuts, seeds, vegetables and fruit with no added salt, sugar or fat*
- Savoury crackers or breadsticks can be served at lunch with fruit or vegetables or dairy food
- No confectionery, chocolate or chocolate-coated products*
- Desserts, cakes and biscuits are allowed only at lunchtime. They must not contain any confectionery
- Salt must not be available to add to food after it has been cooked*
- Any condiments must be limited to sachets or portions of no more than 10g or one teaspoonful*



Milk and dairy

- A portion of food from this group every day
- Lower fat milk and lactose reduced milk must be available for drinking at least once a day during school hours



Meat, fish, eggs, beans and other non-dairy sources of protein

- A portion of food from this group every day
- A portion of meat or poultry on three or more days each week
- Oily fish once or more every three weeks
- For vegetarians, a portion of non-dairy protein on three or more days each week
- A meat or poultry product (manufactured or homemade, and meeting the legal requirements) no more than once each week in primary schools and twice each week in secondary schools*

Food provided outside lunch

- * Fruit and/or vegetables available in all school food outlets
- * No savoury crackers and breadsticks
- * No cakes, biscuits, pastries or desserts (except yoghurt or fruit-based desserts containing at least 50% fruit)



Starchy food

- One or more whole grain varieties of starchy food each week
- One or more portions of food from this group every day
- Three or more different starchy foods each week
- Starchy food cooked in fat or oil no more than two days each week*
- Bread* with no added fat or oil* must be available every day



Healthier drinks*

- Free, fresh drinking water at all times
- The only drinks permitted are:
 - Plain water (still or carbonated)
 - Lower fat milk or lactose reduced milk
 - Fruit or vegetable juice (max 150 ml)
 - Plain soya, rice or oat drinks enriched with calcium; plain fermented milk (e.g. yoghurt) drinks
 - Unsweetened combinations of fruit or vegetable juice with plain water (still or carbonated)
 - Combinations of fruit juice and lower fat milk or plain yoghurt, plain soya, rice or oat drinks enriched with calcium; cocoa and lower fat milk; flavoured lower fat milk
 - Tea, coffee, hot chocolate
- Combination drinks are limited to a portion size of 150ml. They may contain added vitamins or minerals, but no more than 5% added sugars or honey or 150mls fruit juice. Fruit juice combination drinks must be at least 45% fruit juice



Figure 1 - School Food Standards (School Food Plan, 2014)

The *School Food Standards* highlight that school food provision should be varied and contain foods from the food groups identified in the *Eat Well Guide* as demonstrated below in *Figure 2*.



Figure 2 - Eat Well Guide (Public Health England, 2016)

By consuming a varied diet including items from each of the sections highlighted in the *Eat Well Guide*, such as fruit and vegetables, carbohydrates, protein and dairy, children will meet some of their daily nutritional requirements. A varied diet will support for them to meet the requirement as set out below on *Tables 1-3*.

However, the main consideration for these standards is that they allow for the inclusion of calorie dense foods, such as desserts, cakes and biscuits, to be served at lunchtime only. However, these standards do not specify a time limit, suggesting that these types of foods can be provided daily. Calorie dense food may provide additional calories which could lead to potential weight gain if consumed in excess. Therefore, it is important to understand the nutritional composition of food provision, which will be highlighted further in the report.

Government Dietary Recommendations

The government dietary recommendations are highlighted below in *Table 1* demonstrating the recommendations for energy and for macronutrients. In *Table 2*, the recommendations for vitamins and minerals are highlighted.

Even though children will not meet their daily nutritional requirements through a single meal, it is important to highlight the variety of nutrients that children need and that the school meal can provide a substantial amount of these nutritional requirements if it meets certain standards.

Table 1 - Government recommendations for energy, macronutrients, salt and dietary fibre for males and females aged 4-18 years (Public Health England, 2016a)

Age (years)	4-6		7 - 10		11 - 14		15-18	
Gender	Males	Females	Males	Females	Males	Females	Males	Females
Energy(MJ/day)	6.2	5.8	7.6	7.1	10.5	8.4	10.5	8.4
Energy (kcal/day)	1482	1378	1817	1703	2500	2000	2500	2000
<i>Macronutrients</i>								
Protein (g/day)	19.7	19.7	28.3	28.3	42.1	41.2	55.2	45.0
Fat (g/day) [Less than]	58	54	71	66	97	78	97	78
Saturated fat (g/day) [Less than]	18	17	22	21	31	24	31	24
Polyunsaturated fat (g/day)	11	10	13	12	18	14	18	14
Monounsaturated fat (g/day)	21	20	26	25	36	29	36	29
Carbohydrate (g/day) [At least]	198	184	242	227	333	267	333	267
Free sugars (g/day) [Less than]	20	18	24	23	33	27	33	27
Salt (g/day) [Less than]	3.0	3.0	5.0	5.0	6.0	6.0	6.0	6.0
Fibre (g/day)	15 (4y) 20 (5-6y)	15 (4y) 20 (5-6y)	20	20	25	25	30	30

Table 2 - Government recommendations for vitamins and mineral for males and females aged 4-18 years (Public Health England, 2016a)

Age (years)	4-6		7 - 10		11 - 14		15-18	
Gender	Males	Females	Males	Females	Males	Females	Males	Females
Vitamin A (µg/day)*	400	400	500	500	600	600	700	600
Thiamin (mg/day)	0.6	0.6	0.7	0.7	1.0	0.8	1.0	0.8
Riboflavin (mg/day)	0.8	0.8	1.0	1.0	1.2	1.1	1.3	1.1
Niacin equivalent (mg/day)	9.8	9.1	12.0	11.2	16.5	13.2	16.5	13.2
Vitamin B (mg/day)	0.9	0.9	1.0	1.0	1.2	1.0	1.5	1.2
Vitamin B µg/day	0.8	0.8	1.0	1.0	1.2	1.2	1.5	1.5
Folate (µg/day)**	100	100	150	150	200	200	200	200
Vitamin C (mg/day)*	30	30	30	30	35	35	40	40
Vitamin D (µg/day)***	10	10	10	10	10	10	10	10

4.0 RESULTS AND ANALYSIS

Free school meals are provided to the 69 primary schools in the London Borough of Newham. At the time of writing, catering provision is done in-house through the London Borough of Newham and traded under the name *Newham Catering and Cleaning Services*. They also provide catering to some secondary schools and other nurseries. As of March 31st 2018, the catering provision will become an externalized company, trading as *Juniper Ventures*.

However, not all schools are catered by *Juniper Ventures*. A list of schools that they cater for is listed in *Appendix 1*. It was not possible to conduct a nutritional analysis for schools not being catered by *Juniper Ventures*.

Nutritional Analysis


According to *Juniper Ventures Service Level Agreement (2017)* at the time of writing, this is the school lunch offer for primary and secondary schools in Newham:

- A choice of three hot main course protein dishes including meat or poultry, fish and a vegetarian option (a two-choice menu is also available to schools who wish/require it);
- At least one carbohydrate item (e.g. potato, rice, or pasta);
- A selection of vegetables;
- Choice of desserts one to be fresh fruit and yoghurt;
- At least one of the main courses shall be produced using fresh ingredients;
- A selection of homemade breads to be offered as an additional carbohydrate without butter or spread throughout the week;
- The same variety of meat or poultry or fish items shall not appear on the menu on the same day of successive weeks or consecutive days, or not to be repeated more than once in any five days;
- The same variety of other protein (e.g. pulses, cheese shall not appear on the menu on the same day of successive weeks or consecutive days, or to be repeated more than twice in any five days);
- A selection of at least three different varieties of fresh fruit shall be available daily and where possible fruit will be incorporated into the desserts;
- A hot dessert with appropriate accompaniments should be provided at least twice per week;
- Special medical diets are to be provided when requested by the headteacher on receipt of a written request from a registered doctor or dietician (NCCS provide dietetic support for the formation and checking of appropriate special medical diets as added value to this SLA);
- Compliance with the Soil Association's Bronze Food for Life award scheme is currently maintained, and we are working towards Silver accreditation. Full compliance with the Government Food Based Guidelines will always be a minimum;
- A tailor-made provision to cover the requirements of those with special needs in terms of blended meals and any other specific needs;
- NCCS does not use any foods with the list of prohibited additives as per Appendix A. In addition, the same restriction is placed on all suppliers via the specifications to supply food to the kitchens;
- NCCS do not to use any foodstuff with GM ingredients and the same restriction is placed on all suppliers via the specifications to supply food to the kitchens;
- Supply of fresh drinking water during the lunchtime period in primary schools;
- NCCS will supply fresh drinking water during the lunchtime period.

According to the school offer specified in Juniper Ventures, the offer meets the School Food Standards as highlighted in *Figure 1*. This will be further explored in the next section.

Juniper Ventures offers two menus: an autumn/winter and a spring/summer menu. The menus for Autumn/Winter 2017 are provided below for both primary and secondary schools. The menus are three weekly menus and are rotated throughout the school term.

Primary School Menu

Primary School Menu **Juniper Ventures** 

Week 1	Monday	Tuesday	Wednesday	Thursday	Friday
Meat	Burger in a Burger Bun with Salad & Spicy Wedges	Lamb & Vegetable Tikka Masala* with Basmati Rice	Roast Chicken & Stuffing with Roast Potatoes*	Savoury Chicken & Sweetcorn Pancakes & New Potatoes*	Traditional Keema with Naan Bread*
Fish	Fisherman's Pie*	Italian Style Fish Fillet with Pesto & Cherry Tomatoes*	White Fish Bake with Lemon with Roast Potatoes	Cheesy Tuna Pizza	Fish Fingers with Chips
Vegetarian	Authentic Chick Pea & Potato Curry with Peshwari Bread*	Vegetarian Lasagne & Focaccia*	Mixed Bean Casserole with Crispy Cheese Topping with Roast Potatoes*	Cheese & Tomato Pizza	Cheese & Onion Slice with Chips
Vegetable Choice	Sweetcorn Fresh Broccoli	Fresh Cauliflower Garden Peas	Organic Carrots Fresh Cabbage	Mini Corn Cobbett Grilled Tomatoes	Garden Peas Baked Beans
Dessert	Pear & Chocolate Crumble*	Tutti Frutti Flapjack*	Sticky Honey & Orange Cake*	Fruit Cheesecake*	Fruit, Jelly & Ice Cream*
Daily Options	Fresh Fruit Platter / Fresh Yoghurt / Cheese & Biscuits / Homemade Bread				


Menu from 30th October 2017 to 29th March 2018 *Homemade Dish 

Figure 3 - Primary School Menu Week 1

Primary School Menu

Juniper Ventures



Week 2	Monday	Tuesday	Wednesday	Thursday	Friday
Meat	Baked Sausages with Mashed Potatoes	Pasta Bolognese Bake & Garlic Slice*	Roast Turkey with Yorkshire Pudding with Roast Potatoes*	Glazed BBQ Chicken & Herby Diced Potatoes*	Chicken & Sweetcorn Pie with Puff Pastry with Jacket Wedges*
Fish	Jacket Potato with Tuna & Sweetcorn	Fish in Creamy Coconut Curry with Basmati Rice*	Tuna Melt Panini	Cod in Cheese Sauce & Herby Diced Potatoes*	Fish Fillet in Batter with Jacket Wedges
Vegetarian	Quorn & Pepper Frittata* with Mashed Potatoes	Veggie Burger in a Wholemeal Bun with Salad	Quorn & Sweet Potato Curry with Rice*	Vegetarian Pasta Bake*	Warming Winter Crumble with Jacket Wedges*
Vegetable Choice	Fresh Cauliflower Mixed Vegetables	Mini Corn Cobbett Fresh Roasted Peppers	Organic Carrots Garden Peas	Sweetcorn Fresh Broccoli	Garden Peas Baked Beans
Dessert	Fruit Smoothie	Peach Melba Sponge Slice*	Apple & Pear Crumble with Custard*	Cornflake Cracknel*	Frozen Yoghurt With Fruit
Daily Options	Fresh Fruit Platter / Fresh Yoghurt / Cheese & Biscuits / Homemade Bread				

Menu from 30th October 2017 to 29th March 2018

*Homemade Dish



Figure 4 - Primary School Menu Week 2

Primary School Menu

Juniper Ventures



Week 3	Monday	Tuesday	Wednesday	Thursday	Friday
Meat	Spaghetti and Meatballs in a Marinara Sauce*	Chicken & Vegetable Jollof Rice*	Roast Chicken & Yorkshire Pudding with Roast Potatoes	Lasagne with Garlic & Herb Bread*	Greek Style Chicken Souvlaki with Herby Diced Potatoes*
Fish	Creamy Fish Pie with Lemon & Parsley Mash*	Fish Finger Wrap with Tomato & Basil Mayo	Crunchy Cod Crumble with Roast Potatoes*	Tuna Neapolitan Pasta Bake with Garlic & Herb Bread*	White Fish Bake & Lemon Slice with Herby Diced Potatoes
Vegetarian	Vegetable & Lentil Curry with Rice*	Vegetarian Shepherd's Pie *	Quorn Sausage Cassoulet with Roast Potatoes	Spanish Omelette with Baby Baked Potatoes*	Vegetarian Chill with Rice*
Vegetable Choice	Garden Peas Roasted Vegetables	Sweetcorn Green Beans	Organic Carrots Roasted Autumn Veg	Winter 'Slaw Country Vegetables	Baked Beans Garden Peas
Dessert	Peaches & Custard	Citrus & Coconut Sponge with Custard*	Chocolate & Mandarin Mousse	Carrot & Sultana Cake*	Mini Scotch Pancake with Fruit
Daily Options	Fresh Fruit Platter / Fresh Yoghurt / Cheese & Biscuits / Homemade Bread				

Menu from 30th October 2017 to 29th March 2018

*Homemade Dish



Figure 5 - Primary School Menu Week 3

In order to understand if school meal provision is meeting the *School Food Standards*, the primary school food menu has been benchmarked against the criteria on the table below, demonstrating examples of how the caterer is meeting the school food standards.

Table 3 - Example of primary school weekly menus benchmarked against school food standards criteria

Food Standard	Criteria	Example Menu Week 1	Example Menu Week 2	Example Menu Week 3
Fruit & Vegetables	One or more portion of vegetable or salad as an accompaniment everyday	☑ 2 portions of vegetable provided everyday	☑ 2 portions of vegetable provided everyday	☑ 2 portions of vegetable provided everyday
	One or more portions of fruit everyday	☑ Provided in the fruit platter	☑ Provided in the fruit platter	☑ Provided in the fruit platter
	A dessert containing at least 50% fruit two or more times a week	☑ Fruit provided every day in dessert option but unclear of percentage fruit content	☑ Fruit provided every day in dessert option but unclear of percentage fruit content	☑ Fruit provided every day in dessert option but unclear of percentage fruit content
	At least three different fruits and three different vegetables each week	☑ 2 portions of vegetable provided every day, variety of fruits provided in daily fruit platter	☑ 2 portions of vegetable provided every day, variety of fruits provided in daily fruit platter	☑ 2 portions of vegetable provided every day, variety of fruits provided in daily fruit platter
Starchy Food	One or more portions of food from this group every day	☑	☑	☑
	Three or more different starchy foods each week	☑ Potato, lasagna, bread	☑ Potato, rice, bread	☑ Rice, potato, pasta
	Starchy food cooked in fat or oil no more than two days each week	☑ Chips only on Friday	☑	☑
	Bread with no added fat or oil must be available every day	☑ Homemade bread offered everyday	☑ Homemade bread offered everyday	☑ Homemade bread offered everyday
Milk and Dairy	A portion of food from this group everyday	☑ Yoghurt offered everyday	☑ Yoghurt offered everyday	☑ Yoghurt offered everyday
	Lower fat milk must be available for drinking at least once a day during school hours	☑ Semi-skimmed milk available	☑ Semi-skimmed milk available	☑ Semi-skimmed milk available

Meat, fish, beans, eggs	A portion of food from this group every day	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	A portion of meat or poultry on three or more days each week	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Oily fish once or more every three weeks	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	For vegetarians a portion of non-dairy protein on three or more days each week	<input checked="" type="checkbox"/> Chickpea/bean	<input checked="" type="checkbox"/> Quorn/quorn/veggie burger	<input checked="" type="checkbox"/> Lentil/Quorn sausage/omelette
Foods high in fat, sugar salt	Desserts cakes and biscuits are allowed at lunchtime	<input checked="" type="checkbox"/> Desserts available everyday	<input checked="" type="checkbox"/> Desserts available everyday	<input checked="" type="checkbox"/> Desserts available everyday
Healthier Drink	Only drinks permitted are plain water, milk, fruit or vegetable juice (150ml). Combination drink are limited to 330ml and no more than 5% added sugar	<input checked="" type="checkbox"/> Water available	<input checked="" type="checkbox"/> Water available	<input checked="" type="checkbox"/> Water available

Table 3 above demonstrates that school lunch provision is meeting the *School Food Standards*. There was only one item, in relation to the vegetarian option, where the standard was not met. Additionally, the dessert section needs clarification around the requirement for a dessert to contain at least 50% fruit two or more times a week, since it is difficult to determine the percentage fruit content of a dessert by these guidelines (e.g. 50% by weight or caloric content).

Despite being part of the *School Food Standards*, care should be taken in the provision of desserts and cakes at lunchtime. Even though the nutritional analysis presented in this report demonstrates that the energy content for school meals is within the guidance for school aged children, careful consideration must be taken when providing some food items in schools. For example, dessert provision could lead to the inclusion of desserts in the home environment on a daily basis as this is deemed as the 'norm' in the school environment. This was observed in the pilot, where children were experimenting with new healthy foods at home following implementation of the school meals (Department for Education, 2013). This suggests that provision of desserts could also have a similar impact at home and thereby unknowingly increase a child's daily calorie consumption.

Secondary School Menu

	Monday Americas	Tuesday Europe	Wednesday Traditional	Thursday Asian	Friday
Dish of the Day	Chili Con Carne With Rice & Sides	Chicken Paella	Roast Beef with Yorkshire Pudding with Roast Potatoes	Sweet Chili Chicken Wings & Oriental Rice	Cod Fillet in Batter with Chips
Dish of the Day 2	Vegetable & Bean Burrito with Rice & Sides (V)	Spaghetti Bolognese with Focaccia (V)	Quorn, Broccoli Cauliflower Cheese Bake (V)	Aloo Gobi Curry, Rice, Samosa & Raita (V)	Mince Beef & Onion Pie & Gravy with Mash or Chips
5 A DAY	Corn Cobettes Coleslaw	Italian Style Salad Roasted Vegetables	Seasonal Fresh Vegetables	Spicy Green Beans Sweetcorn	Peas Baked Beans
Street Food	Burger Bar	smart food	joe's	NOODLE BOX	NEO
Dessert	Tutti Frutti Flapjack	Sticky Honey & Orange Cake	Pear & Chocolate Crumble with Custard	Citrus & Coconut Sponge	Fruit, Jelly & Ice Cream

Available daily with all meals: Free access to Salad Bar, Vegetable Selection, Additional Bread

Figure 6 - Secondary School Menu Week 1

	Monday Americas	Tuesday Europe	Wednesday Traditional	Thursday Asian	Friday
Dish of the Day	Jerk Chicken with Rice & Peas	Lasagne with Garlic Slice	Roast Chicken & Stuffing With Roast Potatoes	Authentic Thai Beef Curry with Rice	Breaded Cod Fillet with Chips
Dish of the Day 2	Veggie Chili Dog (V)	Falafel with Humous & Salad in Pitta Bread (V)	Cheese & Leek Flan With New Potatoes (V)	Quorn & Sweet Potato Curry & Naan Bread (V)	Southern Seasoned Chicken
5 A DAY	Plantain Jamaican 'S'law	Greek Salad Sweetcorn	Seasonal Fresh Vegetables	Spicy Asian Salad Spicy Greens	Peas Baked Beans
Street Food	Burger Bar	smart food	joe's	NOODLE BOX	NEO
Dessert	Carrot & Sultana Cake	Lemon Drizzle Cake with Custard	Chocolate Sponge with Chocolate Sauce	Peach Melba Sponge	Chunky Fruit Salad with Frozen Yoghurt

Available daily with all meals: Free access to Salad Bar, Vegetable Selection, Additional Bread

Figure 7 - Secondary School Menu Week 2



Figure 8 - Secondary School Menu Week 3

As with the primary schools, the school food availability for secondary schools was benchmarked against the school food standards in order to assess if they were meeting the standards as demonstrated in Table 4 below.

Table 4 - Example of secondary school weekly menus benchmarked against school food standards criteria

Food Standard	Criteria	Example Menu Week 1	Example Menu Week 2	Example Menu Week 3
Fruit & Vegetables	One or more portion of vegetable or salad as an accompaniment everyday	<input checked="" type="checkbox"/> 2 portions of vegetable in the sections '5 day'. Daily salad bar access	<input checked="" type="checkbox"/> 2 portions of vegetable in the sections '5 day'. Daily salad bar access	<input checked="" type="checkbox"/> 2 portions of vegetable in the sections '5 day'. Daily salad bar access
	One or more portions of fruit everyday	<input checked="" type="checkbox"/> No evidence of this on the menu	<input checked="" type="checkbox"/> No evidence of this on the menu	<input checked="" type="checkbox"/> No evidence of this on the menu
	A dessert containing at least 50% fruit two or more times a week	<input checked="" type="checkbox"/> Fruit provided 5 days in dessert option but unclear of percentage fruit content	<input checked="" type="checkbox"/> Fruit provided 3 days in dessert option but unclear of percentage fruit content	<input checked="" type="checkbox"/> Fruit provided every day in dessert option but unclear of percentage fruit content
	At least three different fruits and	<input checked="" type="checkbox"/> 2 portions of vegetable	<input checked="" type="checkbox"/> 2 portions of vegetable provided	<input checked="" type="checkbox"/> 2 portions of vegetable provided

	three different vegetables each week	provided every day, variety of fruits provided in daily fruit platter	every day, variety of fruits provided in daily fruit platter	every day, variety of fruits provided in daily fruit platter
Starchy Food	One or more portions of food from this group every day	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Three or more different starchy foods each week	<input checked="" type="checkbox"/> Potato, lasagna, bread	<input checked="" type="checkbox"/> Potato, rice, bread	<input checked="" type="checkbox"/> Rice, potato, pasta
	Starchy food cooked in fat or oil no more than two day each week	<input checked="" type="checkbox"/> Chips only on Friday	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Bread with no added fat or oil must be available every day	<input checked="" type="checkbox"/> Homemade bread offered everyday	<input checked="" type="checkbox"/> Homemade bread offered everyday	<input checked="" type="checkbox"/> Homemade bread offered everyday
Milk and Dairy	A portion of food from this group everyday	<input checked="" type="checkbox"/> Yoghurt offered everyday	<input checked="" type="checkbox"/> Yoghurt offered everyday	<input checked="" type="checkbox"/> Yoghurt offered everyday
	Lower fat milk must be available for drinking at least once a day during school hours	<input checked="" type="checkbox"/> Semi-skimmed milk available	<input checked="" type="checkbox"/> Semi-skimmed milk available	<input checked="" type="checkbox"/> Semi-skimmed milk available
Meat, fish, beans, eggs	A portion of food from this group every day	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	A portion of meat or poultry on three or more days each week	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Oily fish once or more every three weeks	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	For vegetarians a portion of non-dairy protein on three or more days each week	<input checked="" type="checkbox"/> Chickpea/bean	<input checked="" type="checkbox"/> Quorn/quorn/veggie burger	<input checked="" type="checkbox"/> Lentil/Quorn sausage/omelette
Foods high in fat, sugar salt	Desserts cakes and biscuits are allowed at lunchtime	<input checked="" type="checkbox"/> Desserts available everyday	<input checked="" type="checkbox"/> Desserts available everyday	<input checked="" type="checkbox"/> Desserts available everyday
Healthier Drink	Only drinks permitted are plain water, milk, fruit or vegetable juice (150ml). Combination drink are limited to 330ml	<input checked="" type="checkbox"/> Water available	<input checked="" type="checkbox"/> Water available	<input checked="" type="checkbox"/> Water available

	and no more than 5% added sugar			
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Nutrient Profile

The nutrient profile for each of the meals provided by *Juniper Ventures* was sent by the catering provider for both the primary and secondary school menu. This provides a snapshot of the nutritional composition of school meals provided in Newham and is based on an overall summary (e.g. a breakdown is not available for each meal). The nutrient summary was analysed for compliance with school aged children nutritional requirements as shown in *Table 5*.

Additionally, focus was placed on specific nutrients such as iron and Vitamin A, as these are commonly of low intake in children aged 11 to 18 (Public Health England, 2015).

Nutrient intake across the day is split into four distinct eating occasions: breakfast, lunch and dinner and added snacks in between meals. Guidance for institutions is that 20% of energy and nutrients comes from breakfast and 30% from lunch and dinner, respectively, and 20% from snacks (Food Standards Agency, 2007).

Table 5 - Average energy from lunch in Newham

Age (years)	Primary School Menu				Secondary School Menu			
	4-6		7 - 10		11 - 14		15-18	
Gender	Males	Females	Males	Females	Males	Females	Males	Females
Energy (kcal/day)	1482	1378	1817	1703	2500	2000	2500	2000
30% energy from lunch (kcal)	440	413	545	510	750	600	750	600
Average Energy from Lunch served in Newham	498	498	498	498	620	620	620	620

As demonstrated above in *Table 5*, there are some age groups receiving a slight elevated energy requirement for their age group. This highlights the importance of monitoring portion control to ensure children are not getting more calories than they need. Additionally, it was noted that on some days the menu has a significant increase in energy content. For example, in the Primary School Week 3 Menu the Thursday meal option provides 663 kcal.

Further nutritional analysis is required as these findings only represent a snap shot of the nutritional analysis.

Important nutrients to consider for school-aged children are iron, calcium, zinc, calcium and Vitamin A (Caroline Walker Trust, 2005). Zinc is of particular concern, since there has been a decrease in consumption in school aged girls, while Iron and Vitamin D are also of concern for children aged 11 to 18 years (National Diet and Nutrition Survey, 2015).

The nutritional analysis summary demonstrates that there is some variance in the energy requirements (kcal). It also demonstrates some variance for key nutrients such as Iron, Zinc and Calcium. However, this variance was minimal, ranging from 0.1 to 1.0 mg as shown in *Figure 8*. For the secondary school menu, there was some variance for calcium and iron, but with very little significance.

Nutritional Guideline Type: Prim Lunch			Primary Lunch				
Nutrient Type	Measure	Value	Target	Guideline	Variance	Variance %	Status
Energy (kcal)	kcal	>498.3	557	Target	58.7	10.5	✘
Fat	g	(18.6)	21.6	Maximum	3.0	13.9	✔
Satd FA /100g fd	g	(5.9)	6.8	Maximum	0.9	13.2	✔
Carbohydrate	g	>65.5	74.2	Minimum	8.7	11.7	✘
Non Milk Extrinsic Sugar	g	(13.6)	16.3	Maximum	2.7	16.6	✔
NSP (Fibre)	g	(5.2)	4.5	Minimum	0.7	15.6	✔
Protein	g	>21.3	8.5	Minimum	12.8	150.6	✔
Iron	mg	(3.3)	3.5	Minimum	0.2	5.7	✘
Zinc	mg	(2.7)	2.8	Minimum	0.1	3.6	✘
Calcium	mg	(219.0)	220	Minimum	1.0	0.5	✘
Vitamin A	µg	(370.5)	200	Minimum	170.5	85.3	✔
Vitamin C	mg	(30.8)	12	Minimum	18.8	156.7	✔
Folate	µg	(68.0)	60	Minimum	8.0	13.3	✔
Sodium	mg	(572.0)	600	Maximum	28.0	4.7	✔

Figure 9 - Summary Nutritional Analysis Primary School Menu

Nutritional Guideline Type: Sec Lunch			Secondary Lunch				
Nutrient Type	Measure	Value	Target	Guideline	Variance	Variance %	Status
Energy (kcal)	kcal	>620.5	646	Target	25.5	3.9	✔
Fat	g	(17.7)	25.1	Maximum	7.4	29.5	✔
Satd FA /100g fd	g	(5.7)	7.9	Maximum	2.2	27.8	✔
Carbohydrate	g	>89.3	86.1	Minimum	3.2	3.7	✔
Non Milk Extrinsic Sugar	g	(17.4)	18.9	Maximum	1.5	7.9	✔
NSP (Fibre)	g	(7.9)	5.2	Minimum	2.7	51.9	✔
Protein	g	>29.1	13.3	Minimum	15.8	118.8	✔
Iron	mg	(4.4)	5.2	Minimum	0.8	15.4	✘
Zinc	mg	(3.5)	3.3	Minimum	0.2	6.1	✔
Calcium	mg	(324.4)	350	Minimum	25.6	7.3	✘
Vitamin A	µg	(335.9)	245	Minimum	90.9	37.1	✔
Vitamin C	mg	(43.5)	14	Minimum	29.5	210.7	✔
Folate	µg	(141.5)	70	Minimum	71.5	102.1	✔
Sodium	mg	(683.0)	714	Maximum	31.0	4.3	✔

Figure 10 - Summary Nutritional Analysis Primary School Menu

Observations

An audit was performed in Newham between November and December 2017 in five primary schools and two secondary schools. Schools were randomly selected and were informed that an audit would be conducted by an external researcher. The Nutrition Coordinator at Juniper Ventures facilitated the visits and arranged dates with the researcher and the schools. The purpose of the audit was to observe the cafeteria environment and to analyse its conduciveness to healthy eating behaviours.

An audit tool was developed to ensure uniformity across data collection. Permission was asked to take pictures of the venue on the day and have been included to demonstrate the dining room environments.

The audit tool was structured to analyse and observe the school cafeteria environment. The following topic items were developed, and the researcher included field notes.

- Cypad Use¹;
- Meals served each day;
- Number of kitchen staff;
- Breakfast club offering;
- Service structure;
- Portion size chart;
- Time allocated in cafeteria;
- Parental input;
- Meal presentation;
- Menu alteration;
- Salad Bar;
- Tray usage.

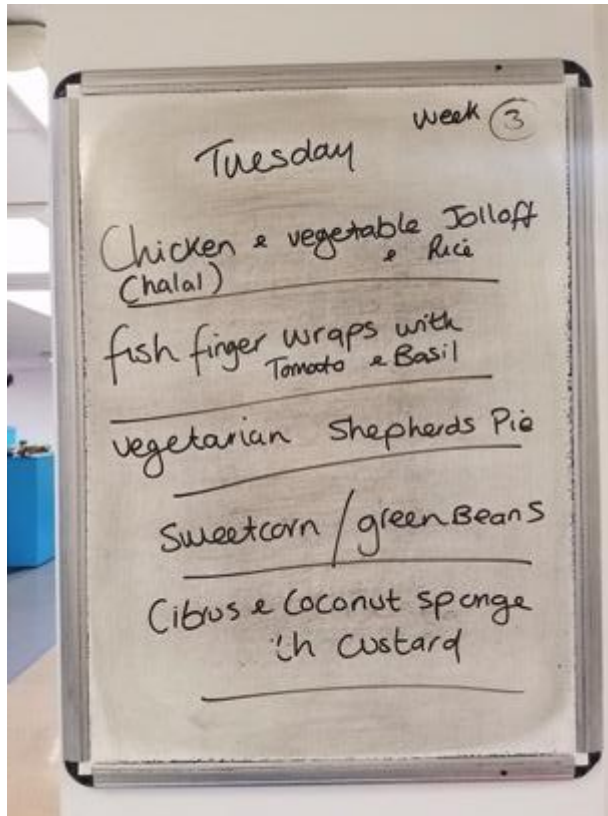
Additional points of observation during the audit were to assess the conduciveness of healthy behaviours. These were the items that were photographed by observing the following:

- Menu display;
- Service structure;
- Meal presentation;
- The use of trays (to support portion guide);
- Dining room presentation.

¹ Cypad provides tablet and web based solutions for school catering teams in all Juniper Ventures' kitchens. They allow Juniper to collect timely information and provide ready access by managers and administration teams as well as sharing information with schools which in turn facilitating a more efficient and effective team working.

Avenue Primary School
5th December 2017

Tuesday Menu – The daily options for students was displayed handwritten on a white board.



Cypad Use – Kitchen staff reported full use of the Cypad system and possessed a Samsung tablet.

Meals served each day – Juniper kitchen staff reported that between 800 and 750 children meals and 25 staff meals are served per day. They also reported that there were few packed lunches but had no figures on the number of students who opt for a packed lunch.

Number of kitchen staff – 12 kitchen staff.

Breakfast club offerings – No breakfast club.

Service structure – Serving occurs at two counters on opposite sides of the kitchen. On “Side 1” reception students are served starting at 11.45 AM and KS2 are served starting at 12.25 PM. On “Side 2” KS1 is served at 12.00. The kitchen manager starts serving on Side 2 and finished at 12.30 PM to begin supervision of kitchen clean up. Serving is finished at 1.30 PM. Each serving side is equipped with an identical salad bar and serving area for desert, yogurt, fruit, and cheese and cracker options. Student helpers were present during meal service to pass out cups to students and assist the kitchen staff in emptying dirty cup receptacles.



Portion size chart – Displayed in manager's office.

Time allocated in cafeteria – Reception students are allocated 40 minutes to be served and eat their meals in the cafeteria. KS1 and KS2 have over 1 full hour to be served and eat their meals. The students queue at the serving counter continuously and are allowed outdoors after they have finished their meals.

Parental input – Juniper staff said that although parents are sent a menu, they do not allow parents to select meals for their children unless the child has specific dietary restrictions.

Meal presentation



Servers were told to stick to menu when serving. Children were not given agency to mix items since “that undermines the dietitian’s work”. Every child received similar portions but were asked if they wanted a second half of the fish wrap (some students received a half wrap and others a full wrap). All the students received vegetables and were called back to the serving station if they left the queue before being served the vegetable option. There was slight inconsistency in the serving of rice (e.g. level spoonful versus heaping spoonful).



Although kitchen staff were actively promoting children to have a hot meal, many children did opt for the sandwich option. Some students were served half a sandwich and others a full sandwich.



Students were given an option of whole fruit (apple, orange, banana), fruit salad, crackers and cheese, or cake and custard. Some students opted to just receive custard.

Salad bar



Salad bar options were not service to reception students and many KS1 and KS2 students bypassed it.

Menu alterations – The Wednesday “Crunchy Cod Crumble” option has been replaced with a white fish bake, as this is thought to be more acceptable to the students

KS1 Tray and KS2 Trays – KS2 was slightly larger than KS1.



Cafeteria environment



The walls were bare of any materials promoting healthy eating or a healthy diet.

Calverton Primary School
4th December

Monday Menu – The menu options for all three weeks was displayed outside of the school entrance. There was also a weekly menu posted by the serving area for students.



Cypad Use - Kitchen staff reported full use of the Cypad system and possessed a Samsung tablet.

Meals served each day – Roughly 320 to 350 meals were reportedly prepared each day. Kitchen staff had recorded 24 packed lunches.

Number of kitchen staff – 6 kitchen staff.

Breakfast club offerings – Breakfast club not provided by Juniper.

Service structure – Serving occurs in the gymnasium which is converted with tables during the lunch period. Children queue in two lines with a single centrally located salad bar. Serving begins at 12.00 PM and runs with 1.00 PM with groups entering the cafeteria area staggered by year. A small number of sandwiches on offer.



Portion size chart – Displayed in kitchen.

Time allocated in cafeteria – Students are allocated 15 minutes to be served and eat their meal.

Parental input – Children's parents don't select children's choices.

Meal presentation





The serving staff gave a generous portion of vegetables to each student. The serving staff did not mix items from different set meals (one student was told “You can’t have mash because that goes with fish”). Students were given a whole orange cut into quarters as a fruit portion. Servers follow portion guidelines (student signaled to stop serving vegetables mix and server said, “no I am giving you one more”). Every student was given 3 meatballs. Students not guided to salad bar.

Menu alterations – Majority of deserts have been replaced with fruits.

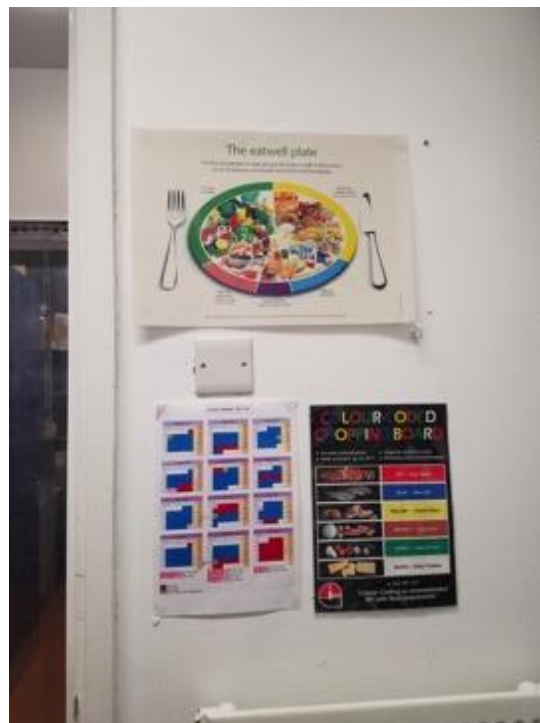
KS1 and KS2 Trays



Cafeteria environment



The walls were bare of any materials promoting healthy eating or a healthy diet. The Eatwell Plate was displayed in the manager's office.



Hartley Primary School
29th November 2017

Wednesday Menu – The menu for the week was posted in the centre of the cafeteria on the barrier separating the two queues.



Cypad Use - Kitchen staff reported full use of the Cypad system and possessed a Samsung tablet.

Meals served each day – Kitchen staff reported 600 to 680 meals being served each day. They estimated that approximately 13 to 15 students bring in packed lunch.

Number of kitchen staff – 9 Juniper kitchen staff and 1 agency.

Breakfast club offerings – Kitchen manager orders breakfast consisting of juices, milkshakes, bread and jam, cereal. Approximately 45 to 50 students are served each day.

Service structure – Serving occurs from 11.45-13.15. Students line up at the door to be let in and form two queues at the two serving counters. Students select their mains and then desert options, with a salad bar selection located near the silverware. Teachers serve as lunch aids.



Portion size chart – None seen.

Time allocated in cafeteria – Each grade is allowed 15 minutes, after eating the students are allowed outdoors until classes resume.

Parental input – Parents sometimes circle what they want children to have on the menu.

Meal presentation



Students were given a large amount of agency to mix-and-match components from different meals and select the quantity of food they wanted. For example, one student received a sandwich, Yorkshire pudding, rice, cake and custard while another received just chips and rice. The students also requested specific quantities, particularly the KS2 students. Students received second helpings when requested. The serving arrangement results in the view of the fruit being partially obstructed and children and offered desert before they are offered fruit. In some cases students were given just custard. Fruit servings are given in ½ an orange. There is also a fruit platter offered consisting of pineapple, grapes and kiwi.

Salad bar – salad bar is self-service for KS2, served for KS1.



Menu alterations – None.

KS1 Trays and KS2 Trays



Cafeteria environment



Sandringham Primary School
7th December 2017

Thursday Menu – Menu displayed in kitchen and on serving window. Menu alternations are indicated in red.

Week 7	Monday	Tuesday	Wednesday	Thursday	Friday
Main Choice	Chicken Curry with Basmati Rice	Spaghetti & Meatballs in a Marinara Sauce	Roast Chicken & Yorkshire Pudding with Roast Potatoes	Lamb & Vegetable Jollof Rice	Fish in Batter & Chips
Vegetarian	Vegetable & Lentil Curry with Rice*	Vegetarian Shepherd's Pie *	Macaroni Cheese Cake	Vegetable samosa with Rice & Dahl	Leek & Tomato Quiche with Chips
Vegetable Choice	Garden Peas Roasted Vegetables	Sweetcorn Green Beans	Organic Carrots Roasted Autumn Veg	Winter 'Slaw Country Vegetables	Baked Beans Garden Peas
Dessert	Fresh Fruit Platter / Fresh Yoghurt / Cheese & Biscuits				Citrus & Coconut Sponge with Custard
Daily Options	Fresh Fruit Platter / Fresh Yoghurt / Cheese & Biscuits / Homemade Bread				

Menu from 30th October 2017 to 29th March 2018 HMC Halal and Non-Halal

Cypad Use - Kitchen staff reported full use of the Cypad system and possessed a Samsung tablet.

Meals served each day – There are 750 students, 800 individuals including staff, with 120 nursery students.

Number of kitchen staff – number not given.

Breakfast club offerings – Breakfast is provided internally.

Service structure – Serving occurred between 11.30 AM and 12.40 PM. Students are called into the cafeteria by year and form two queues at two service windows. A salad bar is positioned in the centre of the cafeteria.



Portion size chart – Displayed in manager's office.

Time allocated in cafeteria – Each age group is allocated 15 minutes.

Parental input – None, however each meal with meat is presented in a halal and non-hallal option.

Meal presentation



School Meal Evaluation, Newham 2018

Students who did not receive vegetables were called back to the service window to receive them. Both KS1 and KS2 were served a single samosa, although $\frac{1}{2}$ sandwich was given to KS1 and a full sandwich to KS2. Desert are only served on Fridays and have been replaced with fruit every other day. Great fruit presentation.



Salad bar



Menu alterations – Menu alterations are detailed in red. The school has replaced desert with fruit for Monday through Thursday.

Sandringham Primary School Juniper Ventures



Week 1	Monday	Tuesday	Wednesday	Thursday	Friday
Main Choice	Burger in a Burger Bun with Salad & Spicy Wedges	Crunchy Cod Crumble with New Potatoes	Roast Chicken & Stuffing with Roast Potatoes*	Lamb Cottage Pie	Fish Fingers with Chips
Vegetarian	Authentic Chick Pea & Lentil Curry with Peshwari Bread*	Vegetarian Lasagne & Faiscous*	Mixed Bean Hot Pot*	Cheese & Tomato Pizza	Cheese & Onion Slice with Chips
Vegetable Choice	Sweetcorn Fresh Broccoli	Fresh Cauliflower Garden Peas	Organic Carrots Fresh Cabbage	Mini Corn Cobbeet Grilled Tomatoes	Garden Peas Baked Beans
Desert	Fresh Fruit Platter / Fresh Yoghurt / Cheese & Biscuits				Chocolate Sponge with Custard
Daily Options	Fresh Fruit Platter / Fresh Yoghurt / Cheese & Biscuits / Homemade Bread				

Menu from 30th October 2017 to 29th March 2018 HMC Halal and Non-Halal



Sandringham Primary School Juniper Ventures




Week 2	Monday	Tuesday	Wednesday	Thursday	Friday
Main Choice	Home made Southern Fried Style Crumb: Chicken with Herby Diced Potatoes	Cheesy Tuna Pizza	Roast Lamb with Yorkshire Pudding with Roast Potatoes*	Chicken & Sweetcorn Puff Pastry pie & New Potatoes	Fish Fillet in Batter with Jacket Wedges
Vegetarian	Mixed Pepper & Onion Hoagie	Mixed Bean Burrito Wrap	Quorn & Sweet Potato Curry with Rice*	Vegetarian Pasta Bake*	Jacket Potato with Cheese
Vegetable Choice	Fresh Cauliflower Mixed Vegetables	Mini Corn Cobbeet Fresh Roasted Peppers	Organic Carrots Garden Peas	Sweetcorn Fresh Broccoli	Garden Peas Baked Beans
Desert	Fresh Fruit Platter / Fresh Yoghurt / Cheese & Biscuits				Fruit Cheesecake
Daily Options	Fresh Fruit Platter / Fresh Yoghurt / Cheese & Biscuits / Homemade Bread				

Menu from 30th October 2017 to 29th March 2018 HMC Halal and Non-Halal




Sandringham Primary School Juniper Ventures



Week 2	Sunday	Tuesday	Wednesday	Thursday	Friday
Main Choice	Chicken Curry with Basmati Rice	Spaghetti & Meatballs in a Marinara Sauce	Roast Chicken & Yorkshire Pudding with Roast Potatoes	Lamb & Vegetable Jollof Rice	Fish in Batter & Chips
Vegetarian	Vegetable & Lentil Curry with Rice*	Vegetarian Shepherd's Pie*	Macaroni Cheese bake	Vegetable samosa with Rice & Dahi	Leek & Tomato Quiche with Chips
Vegetable Choice	Garden Peas Roasted Vegetables	Sweetcorn Green Beans	Organic Carrots Roasted Autumn Veg	Winter Slaw Country Vegetables	Baked Beans Garden Peas
Dessert	Fresh Fruit Platter / Fresh Yoghurt / Cheese & Biscuits				Citrus & Coconut Sponge with Custard
Daily Options	Fresh Fruit Platter / Fresh Yoghurt / Cheese & Biscuits / Homemade Bread				

Menu from 30th October 2017 to 29th March 2018 HMC Halal and Non-Halal



KS1 and KS2 Trays



Cafeteria environment



Sir John Heron Primary School
28th November 2017

Tuesday Menu – Men posted in the kitchen.

Week 2	Monday	Tuesday	Wednesday	Thursday	Friday
Meat	Baked Sausages with Mashed Potatoes	Pasta Bolognese Bake & Garlic Slice*	Roast Turkey with Yorkshire Pudding with Roast Potatoes*	Glazed BBQ Chicken & Herby Diced Potatoes*	Chicken & Sweetcorn Pie with Puff Pastry with Jacket Wedges*
Fish	Jacket Potato with Tuna & Sweetcorn	Fish in Creamy Coconut Curry with Basmati Rice*	Tuna Melt Panini	Cod in Cheese Sauce & Herby Diced Potatoes*	Fish Fillet in Batter with Jacket Wedges
Vegetarian	Quorn & Pepper Frittata* with Mashed Potatoes	Veggie Burger in a Wholemeal Bun with Salad	Quorn & Sweet Potato Curry with Rice*	Vegetarian Pasta Bake*	Warming Winter Crumble with Jacket Wedges*
Vegetable Choice	Fresh Cauliflower Mixed Vegetables	Mini Corn Cobbett Fresh Roasted Peppers	Organic Carrots Garden Peas	Sweetcorn Fresh Broccoli	Garden Peas Baked Beans
Dessert	Fruit Smoothie	Peach Melba Sponge Slice*	Apple & Pear Crumble with Custard*	Cornflake Cracknel*	Frozen Yoghurt With Fruit
Daily Options	Fresh Fruit Platter / Fresh Yoghurt / Cheese & Biscuits / Homemade Bread				

Menu from 30th October 2017 to 29th March 2018

*Homemade Dish

Cypad Use - Kitchen staff reported full use of the Cypad system and possessed a Samsung tablet.

Meals served each day – Estimated 400 students, 389-392 meals served each day.

Number of kitchen staff - 6 kitchen staff

Breakfast club offerings – Breakfast club not lead by Juniper staff.

Service structure – Serving to reception begins at 11.30 AM with reception students. The salad bar is not uncovered for reception students. At 12.00 PM, the KS1 students are served, each year group enters the cafeteria (converted gymnasium) in 15-minute intervals. There is a single queue to be served from one service window.

Portion size chart – None.

Time allocated in cafeteria – Students enter by year and are given 15 minutes to be served and eat their meal.

Parental input – None.

Meal presentation



Meat and fish options were presented first, then the vegetarian option. Desert as presented before fruit, which was partially obstructed by the serving window. Fruit uptake was encouraged (“Do you want grapes?”). Children helped by staff at salad bar next to silverware station by student lunch helpers and adult helpers (“hello what would you like?”). Vegetable serving at salad bar was 3 small pieces of cucumber.

Fruit selection was banana, apple, or orange. Portion was $\frac{1}{2}$ orange. Students were asked many times if they wanted custard (“do you want custard?”, “custard?”).

Menu alterations – None.

KS1 and KS2 Trays



Cafeteria environment







Secondary School Observations

Rokeby Secondary School (for Boys)
6th December 2017

Wednesday Menu – The daily options for students was displayed at the serving queue for the indoor group. For the outdoor group, the simplified menu was posted in the service window.

Monday	Tuesday	Wednesday	Thursday	Friday
'New Yorker' Spaghetti & Meatballs	Piri Piri Chicken with Savoury Rice	Roast Lamb & Yorkshire Pudding with Roast Potatoes	Lamb Tikka Masala with Rice	Cod Fillet with Batter and Chips
Cajun Chicken with Potato Wedges	Veggie Lasagne & Garlic Bread	Vegetarian Keema Naan with Raita	Creamy Fisherman's Pie	Bangers & Mash (or Chips) with Onion Gravy
Spicy Bean Burger in Bun & Coleslaw	Haloumi Kebab & Salad in Pitta Bread	Mac & Cheese & Garlic Bread	Thai Style Veggie Noodles	Cheese & Onion Pasty
American Pancakes with Fruit & Ice Cream	Chocolate Mousse	Apple & Cinnamon Crumble with Custard	Mandarin & Kiwi Cheesecake	Fruit Smoothie



Cypad use – Full Cypad use via a Samsung tablet. The school uses a cashless system operated through finger prints of students. This system allows parents to top-up their children's account online and students who are eligible for free meals are able to receive their meals anonymously and efficiently.

Meals served each day – Kitchen staff reported 260 students are served lunch by the school. They estimated that approximate 370 students are served each day if breakfast is included. The number of lunches provided has reportedly been cut down by changes to the benefits system in Newham. Apparently, the percentage of students eligible for free lunches used to be a 50-50 split but has been greatly reduced. Kitchen staff reported that about 400-500 lunches were served each day before the change to the benefits system.

Number of kitchen staff – There are 8 kitchen staff.

Breakfast club offerings – School provides breakfast through Juniper. This consists of toast, beans, cereals, and yogurt.

Service structure – Lunch provision begins at 1.00 PM. There are two service areas, one indoor in the cafeteria and one outdoor. The groups which are seated in each section rotate by week. One week the younger years will eat outside and the older groups inside and will alternate the next week. The indoor service is provided with a full menu while the outdoor group is provided with a stripped down versus with less offerings.

School Meal Evaluation, Newham 2018

The indoor service offers no drinks behind the counter and the students are given only water at their tables. The kitchen staff stated the lack of beverage options is to encourage children to get a hot meal and not fill up on beverages. The indoor and outdoor groups are served at the same time.

Portion size chart – Posted in manager's office.

Time allocated in cafeteria – Students have 30 minutes to eat in the cafeteria and the outdoor seating. Student seated outdoor are able to immediately enter the court yard after they have finished their meal.

Parental input – None.

Meal presentation





Students don't have agency to mix items from different meals. Pasta bar is the first option when walking into queue. Fruit cups and cookies given every day, not alternative to desert.

Menu alterations – The school has reported alterations to the menu to make the offerings more acceptable to students and increase uptake and reduce waste.

Trays



Cafeteria environment



The payment system is automated through the use of a fingerprint scanner. The system automatically notes which students are eligible for free meals and parents top up students accounts online.



Eastlea Secondary School
1st December 2017

Friday menu - Daily option posted for students at till.



Cypad Use – Kitchen staff reported full use of the Cypad system and possessed a Samsung tablet.

Meals served each day – Kitchen staff reported 179 students receiving free lunch. The number of students receiving a free lunch has reportedly been cut in half due to the recent changes to the benefits system in Newham which has left many students ineligible for free lunch. Some students are on the threshold and are vulnerable and the school provides for them. About 300 buy lunch each day.

Kitchen staff highlighted the need to convert to a cashless system after a bag inspection for all students yielded 16 black trash bags of confiscated junk food. This led the school to believe that students were using the lunch money given to them by their parents on junk food outside of school. The new cashless online top-up system will allow parents to top-up their children's account online and ensure their lunch money is used as intended.

Number of kitchen staff – 7 staff.

Breakfast club offerings – Not by Juniper.

Service structure – Lunch service runs from 12.55 PM to 1.30 PM and children exit the cafeteria to an outdoors area once they are done eating and remain until 2.00 PM. Eastlea does not have a cashless

School Meal Evaluation, Newham 2018

system. Children queue up outside of the cafeteria and wait at the till where they either pay for a token or receive a token if they are eligible for free lunch. The kitchen staff working the till knows who is eligible for free lunch from memory and can consult a list if necessary.

The students then queue in two lines at the main serving areas or receive a sandwich from the side serving areas.



Portion size chart – None displayed.

Time allocated in cafeteria – about 35 minutes.

Parental input – None.

Meal presentation



BREAK		LUNCH	
Pizza Slice	£1.00	Meal Deal	£2.10
Toasties	£1.20	Main Meal	£1.80
Pasties	£1.40	Hot Wraps	£1.70
Sandwiches	from £1.80	Pasta / Rice	
Rolls/Wraps	from £1.70	Noodle Pots	£1.70
Salad Pots	from £1.70	Jacket Potato	£1.70
		Dessert	60P

SNACKS		DRINKS	
Muffins	50/90p	Calypso Carton	50p
Flapjacks	50/90p	Bottled Drinks	90p
Traybakes	60p	Suso	90p
Granola Pots	60p	Milkshakes	60p
Yoghurt	50p	Mineral Water	50p
Fresh Fruit	50p	Hot Chocolate	80p

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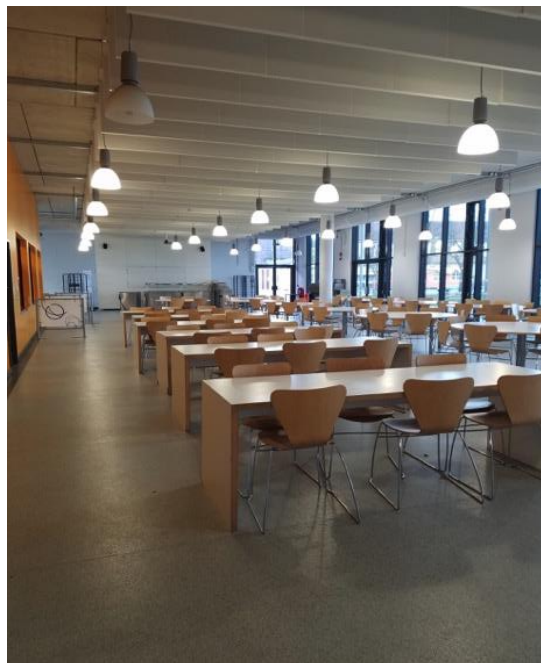
The meals set for secondary schools offer a meal deal of a main and 2 items to mix-and-match. There are also offerings for wraps and pasta pots.



Trays – Trays display the *Eatwell* Plate.



Cafeteria environment



Posters and other materials are not allowed on the walls of the cafeteria because the venue is used by other organisations. There was no information on healthy eating aside from the *Eatwell* plate on the trays.

Primary School Analysis

Table 6 - Analysis of observations during school visits

	Avenue	Calverton	Hartley	Sandringham	Sir John Heron
Menu on display	☑	☑	☑	☑	☑
No. Meals Served (%uptake)	800 (88%)	350 (80%)	680 (76%)	800 (84%)	400 (83%)
Packed Lunches	Not known	24 packed lunches	15 packed lunches	Unknown	Not known
Breakfast Provision	No	Yes - not Juniper	Yes, order from Juniper and provide to 45 pupils	Internal provision	Yes - not Juniper
Service Structure	Staggered year groups with student helpers	Staggered year groups	Staggered year groups with teacher as lunch aid	Staggered year groups	Staggered year groups with student and adult lunch helper
Nudges	All students received vegetables	Not guided to salad bar	Salad bar placed near cutlery	Children that did not receive vegetables asked to come back to receive some	Dessert placed before fruit, but children encouraged to choose fruit
Servings	Stick to menu, don't mix items	Generous vegetables portion, don't mix menu items	Mix and match menu items	No comments	No comments
Portion Size Display	Displayed in kitchen manager's office	Displayed in kitchen	None observed	Displayed in kitchen manager's office	None observed
Time to eat	40minutes	15 minutes	15 minutes	15 minutes	15 minutes
Parent information	Menu sent	None	Menu sent	None	None
Cafeteria environment	No healthy eating promotions	No healthy eating promotions Picture of old eat well plater	Some healthy eating promotion material on the wall	No healthy eating promotions	Lots of healthy eating promotion material
Menu Alteration	Replaced one food item	Replaced dessert Monday-Thursday with fruit	None	Replaced dessert Monday-Thursday with fruit	None
Other	Sandwiches offered	Sandwiches offered	N/A	N/A	N/A

The number of meals served between the five primary schools visited varied depending on the number of pupils attending. Uptake was calculated based on the rough estimates given on the days of visits. Therefore, these estimates do not provide a clear picture of direct

uptake. However, they provide an estimate of uptake. Additionally, some schools were not monitoring the number of packed lunches brought in and absenteeism was not taken into consideration as this data was not asked for, therefore exact uptake could not be calculated. Regardless of this uptake did not fall below 76%, yet there is no target for uptake for universal free school meals, though the aim would need to be 100% in order to make the initiative cost effective.

All schools, with the exception of Avenue Primary, provided a breakfast service. Hartley Primary provided this service through *Juniper Ventures* and all others used an alternative provider. This breakfast services also requires monitoring in order to ensure children are received adequate breakfast.

Service structure across all schools was similar in that students entered into the lunch room according to their year group. Some schools had student helpers assisting during service and some schools used teacher aid. School had an average of 15 minutes to serve and eat lunches, apart from Avenue which allowed 40 minutes.

Throughout the observations, it was noted that some schools 'nudged' students towards the healthier option or in some cases created an environmental nudge through food placement or educational posters. For example, in Sandringham children were asked to come back to receive vegetables. In other schools such as Sir John Heron there were no environmental nudges, and healthy selections were encouraged by teachers

Most schools adhered to the menu provision when serving school meals. This meant that they served meals to the exact menu specifications and did not mix the options. In one school, there was an instance where this mixing of meals offerings was allowed and a child received potato chips and rice. This demonstrates the importance of staff training, since the student did not receive a nutritionally adequate meal. However, it also demonstrated that staff training could allow for a degree of autonomy in helping children make healthy choices, as seen in Avenue Primary School where staff ensured all children received vegetables.

The portion size displays were mainly kept in the kitchen manager's office, with the chart posted in the kitchen in only one school. This could be due to health and safety reasons, or perhaps the staff already know the standard portion sizes. However, the kitchens do employ agency staff and therefore introductions and guidance on portions should be part of the induction for all new members of staff until they familiarize themselves with the portion sizes.

The cafeteria environment was very similar across all schools, as demonstrated in the pictures above. Some schools do not have dedicated dining room facilities and often their sports halls double up as their lunch room. This could be the reason why health promotion material was not on display in some schools and it could indicate that health promotion material was included in other areas of the school that were not observed by the researcher.

There were two schools, Calverton and Sandringham that voluntarily opted to remove desserts from their menu option between Monday and Thursday. The percentage of pupils meeting the expected standards was compared between schools that had opted to reduce dessert during the week against those that remained with the 5 day a week dessert option, as shown in *Table 7*.

Table 7 - Further analysis of schools visited

	Avenue	Calverton	Hartley	Sandringham	Sir John Heron
Number of pupils	903	435	891	986	474
% of pupil meeting expected standards (Key Stage 2 2017)	49%	70%	58%	67%	65%

There were no formal statistical analyses performed on this comparison. Furthermore, the percentage of pupils meeting expected standards may be associated with confounding factors that have not been mentioned here. However, the literature suggests that increased provision of healthy food leads to better health and educational outcomes. Therefore, further attention should be given to these subtle changes to the menus that can have significant impact on children’s health and educational outcomes. Further recommendations have been made in the conclusion.

Table 8 - Analysis of observations during secondary school visits

	Rokeby	Eastlea
Menu on display	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
No. Meals Served (%uptake)	300	370
Packed Lunches	Not known	Not known
Breakfast Provision	Yes-Juniper provides	Yes-not Juniper
Service Structure	Students queue	Students queue
Nudges	None observed	Trays has picture of old eat well guide
Servings	None observed	None observed
Portion Size Display	Displayed in kitchen manager’s office	Displayed in kitchen
Time to eat	40 minutes	15 minutes
Cafeteria environment	No healthy eating promotions	No healthy eating promotions
Menu alteration	Reported altering menu to suit children’s needs	N/A

Secondary school meal provision is not universally free of charge in Newham, so children make payments to buy their lunch. There are some children that are eligible for free school meals due to the benefits system in place in the borough and this was reflected in the researcher’s observations.

The secondary school lunch menus are displayed in the cafeteria to allow students to select their desired meal from the food available. Here students have agency to make their own choices, however there was no indication of ‘nudges’ to support healthy behaviours. Additionally, despite one nudge found through the use of the *Eat Well plate* tray, the guide presented was an old version of the plate.

Portion Guides

To ensure children are receiving adequate portions, staff receive training on portion sizing in addition to a portion size guide and a yield measures guide. This allows staff to calculate how

many portions each food will yield, and this information can be used in calculations to order and prepare food. Additionally, all staff receive customer service training and the benefits of healthy eating training.

Despite having training and guidance, notes during observations suggest variations in serving sizes and student agency to request more or fewer servings. For desserts in particular, children were allowed to ask for custard only in a set desert which included fruit cake and custard. This serving habit also negates the guidance for deserts to consist of 50% fruit. It was also noted that portion sizing was inconsistent within some schools. However, this was anecdotal from the researcher's observations and was not something that was routinely measured during the observation.

This evaluation did not include a qualitative assessment of staff providing school meals. Further research is needed to understand reasons for portion variation in school meal provision, given that training and implementation guides are provided.

Trays used

It was noted that all primary schools used the same sized meal trays for the school meal provision. There was no guide as to how the portions should be served on the tray. It was noted that Key Stage 1 (KS1) received a smaller tray than Key Stage 2 (KS2). This helps to account for the variation in energy requirements in the different age groups and assist in guiding portion sizes.

However, during the observation it was not possible to photograph how the trays were served as this was not part of the observation audit tool. Further research is needed to understand how the tray is used in conjunction with the menu provided by Juniper Ventures and how staff are trained to serve meals in the trays.

Breakfast Provision

In addition to offering lunch provision to schools, Juniper Ventures also offer breakfast provision to some schools. We found that they offer breakfast to 16 schools in Newham. The model of provision varied from supplying only ingredients or charging for breakfast provision at the range of 50p - £1.00. For this evaluation, breakfast menu were not available and nor were the nutritional analysis of breakfast provisions. However, *Juniper Ventures* confirms that the options/menus offered to schools when the breakfast service was set up had been designed with the support of their dietitian to ensure all the products served are school compliant, however the ultimate menu is agreed with the school itself.

Breakfast is an important meal of the day and provides children with the energy needed for the start of the school day. Evidence suggests that breakfast can have an effect on cognitive performance in children (Hoyland et al, 2009). Additionally, skipping breakfast is also associated with being overweight in school-aged children (Koca et al, 2017). Therefore, attention should be focused on the provision and monitoring of the nutritional composition of the breakfast offer. Further recommendations have been made in the conclusion.

Certifications

The catering provision delivered by Juniper Ventures complies with the *Soil Association's Bronze Food For Life* award scheme. The *Food For Life* award scheme is a nationally recognized scheme that communities recognize and provide assurance of the provenance of food and the healthiness of food. *Juniper Ventures* are currently working toward Silver

accreditation. The criteria to meet the Bronze Award scheme are demonstrated below in Table 9.

Table 9 - Soil Association Food For Life Bronze Award accreditation criteria

Criteria	Verified in this Evaluation
No undesirable additives or trans fats	Yes- verified through nutritional analysis of menu. Standard Level Agreement States GM ingredients not used.
At least 75% of dishes are freshly prepared from unprocessed ingredients	Yes-Juniper Ventures state on their menu that 80% of the food cooked is from fresh ingredients
Meat is from farms which satisfy UK welfare standards	Yes-display 'Red Tractor' Assurance Mark on menu- stating all their fresh meat is Red Tractor Assured
Eggs are from cage-free hens	Yes-display information about free range egg availability on menu
Menus are seasonal and in-season produce is highlighted	Yes-fresh seasonal fruit platter is offered and highlighted on menu. Menu changes for Spring/Summer and then Autumn/Winter
Catering staff are supported with skills training in fresh food preparation and the Food for Life Served Here Award	Yes- audit forms confirm training is provided to staff
Free drinking water is prominently available	Yes- observed during audits visits to schools
No fish is served from the (MCS) 'fish to avoid' list	Yes- information about fish displayed on menu
Information is on display about food provenance	Evidence not requested as part of this evaluation
All suppliers have been verified to ensure they apply appropriate food safety standards	Evidence not requested as part of this evaluation
Caterers in schools can demonstrate their compliance with national standards or guidelines on food and nutrition	Yes-through audit forms
Menus provide for all dietary and cultural needs	Yes menus demonstrate this and caterer confirmed all meat is halal, vegetarian options clearly highlighted. Standard level agreements highlights special medical diets are provided upon request

Accreditation towards achieving the *Soil Association Food For Life* Silver award is awarded upon continued adherence to the Bronze criteria and is on a point based scheme. The points are rewarded according to every percentage point of their ingredient spend on ethical and environmentally friendly food, locally sourced ingredients and steps to offer healthier menus, as demonstrated below in *Table 10*.

Table 10 - Soil Association Silver/Gold criteria

<p>1. Ethical and environmentally friendly food Points are awarded for sourcing organic, free range, RSPCA Assured, Fairtrade, LEAF, Marine Stewardship Council certified fish and Marine Conservation Society 'fish to eat'.</p> <p>To achieve silver a minimum of 5% of the ingredient spend on your Food for Life menu must be on organic food.</p> <p>To achieve gold a minimum of 15% of the ingredient spend on your Food for Life menus must be on organic food and at least 5% on free range pork or poultry meat.</p>

2. Making healthy eating easy

Caterers are rewarded for steps to make healthy eating easier for your customers. Points are awarded from a range of optional actions, in line with public health priorities.

3. Championing local producers

Caterers are rewarded for every penny spent on food produced in your region and for above average UK sourcing levels. Research into Food for Life menus has demonstrated a social return on investment of over £3 for every £1 spent, mostly in the form of increased jobs and opportunities for local food producers. The Public Services (Social Value) Act places a duty on public sector institutions to have regard to the economic, social and environmental wellbeing of their relevant area in their food procurement.

There are also associated costs in meeting the Silver criteria, mainly in consideration with the environmentally friendly food. *Juniper Ventures* provided the researchers with estimated costs of organic food for some of the key products they serve in schools. These are demonstrated below in *Table 11*.

Table 11 - Current cost of non-organic products and organic products

Item	Current Cost	Organic Cost	Difference in cost
Baked Beans	£ 48,873	£ 69,545	£ 20,672
Chopped Tomatoes	£ 12,950	£ 24,023	£ 11,073
Milk Semi Skimmed (4 pints)	£ 39,975	£ 47,015	£ 7,040
Milk Semi Skim (2 pints)	£ 2,921	£ 3,041	£ 120
Beef Mince	£ 9,541	£ 24,590	£ 15,049
Beef Topside	£ 9,844	£ 14,716	£ 4,872
Yoghurt	£ 179,467	£ 150,034	-£ 29,433
Total	£ 303,571	£ 332,964	£ 29,393

Table 11 demonstrates that in attempting to meet a recognised award scheme that provides quality assurance in aspects of food provenance there is an associated increased cost. Despite this, there is no evidence to suggest that organic produce is nutritionally superior to non-organic produce. However, it is recognised that food provenance is also an important element of the food supply chain and something that also demonstrates healthy behaviours.



Figure 11 - Good Food For London league table for Newham (London Food Link, 2017)

Juniper Ventures recognizes the importance of working with schools and the *Whole Schools* approach to healthy eating. This is highlighted in their service level agreements with subscribed schools. It should be noted that healthy eating provision, highlighted in the league table above, is not solely reliant on the provision of school meals. In order to ensure healthy eating is promoted in schools and across the community, various partners should promote this message together. This is also highlighted in other healthy eating related topic areas, such as *Baby Friendly* and *Food Growing*. These healthy eating messages are not the sole responsibility of the caterer provider, rather they form a part of the healthy eating provision in Newham and play an important role in providing children with nutritious meals.

Value Added Events

In 2017 *Juniper Ventures* delivered seven value added events to primary schools in Newham, as demonstrated in *Table 12*. However, the catering provider confirmed that between the period March 2017-May 2018 this doubled and amounted to 14 values added days. The value-added events form part of the catering provider’s standard level agreement and aim to support healthy eating knowledge and skills within the school setting. The value-added events are available twice a year and it is up to the school to take up on the offer.

Some examples of the events include:

- Smoothie Bar-with smoothie bike;
- Adopt a Chef-Chef Trainers build links with schools on cooking, basic skills, hygiene, etc.;
- Pupil cooking lessons to include bread making, fruit pizza making, taster sensory session, knife skills or other demonstrations.

Table 12 - List of schools taking up value-added events

Month	School
May	Thames View Infant School Little Ilford
June	Rosetta
July	Winsor
November	North Becton
December	William Davies

It was not specified which valued-added events the schools mentioned above received. Therefore, recommendations have been made in the conclusion about these.

Engagements with Parents

The current provider, *Juniper Ventures*, engages with parents by offering them a chance to taste their food in a taster day event. From May 2017 to March 2018 there were 17 parent taster events offered in different schools. In addition to this *Juniper Ventures* also sends the three-weekly menu to parents via the school.

The catering providers sent the feedback surveys given during the taster day to researchers in order to assess parents' comments about school meal provision. It was not possible to include the results of the questionnaires in this evaluation, as consent was not obtained from parents for the collected data to be utilized in this evaluation.

The meals provided to parents for the taster day events are offered whether or not they have a child taking up the offer of free school meals. This demonstrates how the providers are encouraging parents to engage with free school meals and to take up the offer.

The questions included in the feedback survey are summarized below in *Table 13*. There is one question that asks parents about their perceptions of the healthiness of the school meal. This could be ambiguous as it depends on each parent's understanding of healthy eating. Recommendations have been made at the end of the report to revise the questionnaires.

Table 13 - Questions included in taster day event questionnaires for parental feedback

Q1.
Has your view of school meals changed following this tasting session?

Yes
 No
 No Response
 Comments:

Q2.
Please can you rate the schools meal service?

	Very Good	Good	OK	Poor	Very Poor
Number of choices					
Amount of food given – Child Portion					
Way food is served					
Healthy content of food					

Q3.
Does your Child currently have school meals?

Yes No No Response

Q4.
Will you encourage your child to have school meals since this tasting session?

Yes No No Response

Q4a.
If not, please can tell us why?

Q4b.
What can we do to change this?

Q4c.

Do give us any comments on how our school meals service could be improved from you or your child's viewpoint:

Quality Assurance

In order to ensure quality of school meal provision, *Juniper Ventures* conducts audits in each of the schools they cater for. *Juniper Ventures* utilises an audit form with eleven areas to be monitored, including the following:

1. Menu Compliance;
2. Kitchen Hygiene/Health & Safety;
3. Food Preparation;
4. Food Delivery and Temperatures;
5. Food Presentation and Taste;
6. Cash Controls;
7. Company/Legal Regulation;
8. Equipment/Storage;
9. Unit Paperwork;
10. Staff appearance & Customer Service;
11. Training.

Each section has several subsections and points are awarded to schools if these guidelines are adhered to. At the end of the audit, the total is added up to give an overall audit score. Depending on the score, a school can pass or fail. Schools which fail are given corrective measures to improve their score.

The two sections with relevance to nutrition and healthy eating are the *Menu Compliance & Service* and *Food Preparation & Taste*. The subsections for each of the topics are included below in *Tables 14* and *15*.

Table 14 - Section 1 of Juniper Ventures School Audit 'Menu Compliance & Service'

Menu Compliance & Service
Correct menu week on display.
Menu boards clean and full (if available)
All dishes advertised on offer
Recipe file followed
Water freely on offer
Selection of Fruit Available
Plates, cups and cutlery clean.
Customers served quickly.
Service Start & Finish on Time.
Sufficient food offers available throughout* service
Is service well organised no staff washing up
Portion control charts on display

Table 15 - Section 5 of Juniper Ventures School Audit 'Food Preparation & Taste'

Food Preparation & Taste
Is colour of food appealing.
Is smell of food appealing.
Food fit for service, including vegetables

Does the cook taste the food
Portion Size correct.
Whole plate approach adopted
Children encouraged to take vegetables.
Salad Bar contains min selection of 5 items

These aspects of the audit demonstrate that the providers are implementing practices that influence healthy eating choices. The *Menu Compliance & Service* sections demonstrates the importance of creating a good dining experience for the children. In the literature, evidence suggested that creating a good dining environment which is conducive to healthy eating will have a positive impact on children's behaviours (Golley et al, 2010; Storey et al, 2011).

The Food Preparation & Taste also demonstrates how aspects related to the nutritional requirements are checked. They also promote practices that would also encourage healthy eating behaviours, such as encouraging children to take vegetables and including a variety of options in the salad bar.

Economic Evaluation

This evaluation had intended to include an economic evaluation of school meals using education attainment as an outcome measure. However, it was not possible to obtain data from London Borough of Newham for these outcomes measures, therefore it was not possible to include this part of the evaluation. However, the process and methods for evaluation have been included for future reference and analysis.

This evaluation will utilise a difference in differences approach to establish a link between the implementation of healthy school meals and educational attainment. This association will be discerned from six primary schools and two secondary schools in the London Borough of Newham, where KS2 and KS4 results will be compared retrospectively.

The evaluation will either be:

- A comparative assessment between the sample from the London Borough of Newham and neighbouring local schools as 'control' groups. These will most likely be statistical neighbours or comparator boroughs who have not implemented free school meals for all. Therefore, we need to compare these with statistical neighbours who closely resemble the 'treatment' groups in terms of socio-economic characteristics, ethnicity, etc. This will be contingent on feasibility of obtaining data from neighbouring boroughs, such as Barking & Dagenham, Brent, City of Hackney, Tower Hamlets and Waltham Forest;
- Or a 'before and after' comparison between the sample of schools in Newham before the implementation of the free for all school meals and after;
- Or an interrupted time-series analysis.

This intervention has been implemented for all pupils in the London Borough of Newham since 2011. Data from 2016 onwards cannot be used for comparative purposes, due to the change in educational attainment and progression scoring. Therefore, data from 2009 to 2014 will be collected to cover pre-and post-policy implementation. We would adopt a public sector perspective on both costs and outcomes.

Costs

An ingredients method for costing will be employed;

1. Identifying and specifying the ingredients required to obtain the evaluation results;
2. Determining their costs – including opportunity costs;
3. Calculating total program costs and average costs per pupil;
4. Determining the distribution of cost burden.

Costs that will be included in the analysis (may not include overhead costs, since the structures will have remained the same):

- Labour costs; salary of staff who cook the food and lunch time supervisors;
- Equipment, kitchen facilities;
- Food;
- Premises, refurbishment costs;
- Lunchtime supervisors.

The total cost of providing the school meals will be calculated for each year, alongside the number of meals supplied per year. Therefore, we can calculate the cost per meal.

The cost per meal will be used to estimate the total cost of providing meals to a child across the time they spend at school. A child is provided five school meals per week for 39 weeks per year. All costs will be adjusted for inflation and will not account for adjustments in cost due to diseconomies of scale.

Furthermore, we also need to establish: the proportion of children who bring in packed lunches and the quantify the amount of waste generated.

Educational attainment as an effectiveness measure

The outcome measure will only assess cognitive benefit, not monetary or non-cognitive benefits.

Data from DoE suggests the effectiveness measures for educational attainment for primary and secondary schools are, respectively:

- KS2 testing has three components: English, Maths and Sciences.
 - English: Reading, Grammar, punctuation and spelling.
 - Mathematics: arithmetic and reasoning.

For this analysis, we will assess the proportion of students whom achieve level 4 or above in Science, English, Reading, Writing and Mathematics (2010 and 2014)

- KS4
 - Proportion of students who achieve 5 or more GCSE's at A*-C, or equivalent.
 - Proportion of students who achieve 5 or more GCSE's at A*-C, or equivalent (incl. English and Maths).
 - Proportion of students who achieve 5 or more GCSE's at A*-G.

Modelling long-term impact will require taking on a societal perspective and identifying a suitable long-term outcome measure (e.g. reduction in CVS diseases). However, this would be very timely and not suitable within the timeframe given for this evaluation.

Furthermore, annual data prior to the intervention will need review for any existing or seasonal trends that might confound the analysis. As well as any changes to school status that might affect the outcomes, such as a change to academy status.

Suggested outcome measures could include:

- Average pupil attainment at KS2 and KS4.
- Percentage of pupil achieving/ not achieving/ exceeding the expected level

Outcome measure

An incremental cost-effectiveness (ICER) ratio will be calculated, which'll report the gain or decline in test scores attributed to incremental spending on free school meals.

Limitations

- Unlike to inform us what would be the most efficient investment of the entire resources available for these students.

- Establishing causality is impossible due to the inability to isolate any increase in educational attainment solely to the intervention.

Further Research

Table 16 - Case Study: Research into Food Choices in Secondary Schools



The University of West London is currently conducting research into student's food choices in secondary schools. This research is looking into how branding of healthy foods and product placement impacts student's decision making around healthy food choices.

This research aims to gain an understanding of the decision-making process underlying and shaping adolescent's food selection at school and to evaluate if single or multiple components from the Story et al (2002) conceptual model of food choice require some form of integration into public health strategies to reduce the current adolescent obesity crisis.

Conclusion and Recommendations

This evaluation has demonstrated that school lunch provision is meeting the *School Food Standards*. It has also demonstrated that the food available in primary and secondary schools are meeting the nutritional requirements for children. However, availability of food does not always equate to food consumption. Thus, even though there is healthy food available, there were some instances during the observations which hinted that consumption of healthy food was not always occurring as intended. This indicates that there are further opportunities to increase healthy food consumption.

The responsibility of increasing the consumption of healthy food should be shared between the caterer, the school and the parent, taking a whole school approach in order to meet the health and educational needs of the children and address wider societal issues, such as childhood obesity.

Newham universal free school meals is a valuable resource for parents and for children. The provision is meeting the nutritional needs of children who may otherwise have limited access to healthy food.

The limitations of this evaluation include the impossibility of visiting every primary school to observe their food environment. Additionally, this evaluation did not look at the wider role of food policy within schools and only assessed school meals as a single aspect of this large area of work. There were some methodological limitations in this evaluation, including the lack of observations on what school children were served and the weight of each student's serving. These additional observations would have provided a higher degree of accuracy for analyzing the nutritional requirements. Additionally, in analyzing the environment a validated tool was not used as nothing was available for this specific area of inquiry. Furthermore, despite attempts to provide a cost-effectiveness evaluation, this was not possible due to lack of data.

From the evaluation, these are the following recommendation and action points for both the provider and for the council.

Nutritional Analysis

- Provide a yearly report to Public Health demonstrating how school meals are meeting school food standards and provide examples of this;
- Reevaluate some of the meals where there was a high energy menu.
- Reevaluate key nutrients for the school age population and ensure products meets these requirements

Observations

- Work with schools to understand how to design environment and meal presentation to encourage healthy eating behaviours.

Portion Guides

- Further research needed to understand variation in staff understating.
- Link with early years nutrition training which includes topics on Food Policy.

Breakfast Provision

- For *Juniper Ventures* it is recommended to have a more consistent approach in recording breakfast provision alongside a nutritional analysis of the breakfast provision.
- For Newham it is recommended the breakfast provision be monitored across all schools and to monitor nutritional analysis of breakfast clubs provision to ensure it is meeting nutritional requirements.

Certifications

- Continue to adhere to *Food For Life Certification*.

Value Added Events

- Monitor the value-added events.
- Use evidence-based guidelines to support healthy eating agenda.
- Monitor these as part of the wider public health agenda and include in Child Obesity Action Plan.

Economic Evaluation

- Recommend performing the economic evaluation and work with education team to gather data.

Further Research

- Research in to staff's knowledge and understanding of healthy eating, portion guide and wider health and educational outcome in Newham to understand how to better improve the service.

Other

- Redesign parent questionnaire for taster day and include a before and after questionnaire.
- Conduct in depth interviews with parents that are not opting in for universal free school meals in order to understand reason for not taking up.
- Ensure schools, including kitchen staff have received up-to-date materials and training and are not using old nutrition guidelines such as the Eat Well Plate.
- Make links with universities conducting research in Newham to share results with Public Health Newham.
- Conduct an audit in schools in regards to their wider school food policy and link research from this evaluation to Healthy Schools Evaluation

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6.0 APPENDIX

CATERED FOR BY JUNPER VENTURES
Primary Schools
Avenue Primary School
Brampton Primary School
Britannia Village Academy
Calverton Primary School
Carpenters Primary School
Central Park Primary School
Colegrave Primary School
Dersingham Primary School
Ellen Wilkinson Primary School
Elmhurst Primary School
Essex Primary School
Gallions Primary School
Godwin Junior School
Grange Primary School
Manor Primary School
Maryland Primary School
Nelson Primary School
North Beckton Primary School
Odessa Infant School
Park Primary School
Portway Primary School
Roman Road Primary School
Salisbury Primary School
Sandringham Primary School
Shaftesbury Primary School
Sir John Heron Primary School
Southern Road Primary School
St Anthony's
St Edwards
St Francis R C Primary School
St James CofE School
St Luke's Primary School
St Stephens Primary School
St Winefride's R C Primary School
Thames View Infant School
Vicarage Primary School
West Ham CofE Primary School

William Davies Primary School
Winsor Primary School
Woodgrange Infant School
Free Schools
School 21 - Primary & Secondary
Oasis Academy Silvertown - Secondary
Secondary Schools
Eastlea Community School
Little Ilford School
Rokeby School
The Royal Docks Community School
Nursery Schools
Kay Rowe
Ellen Wilkinson - Little Ellie's
Rebecca Cheetham Nursery School
Pupil Referral Unit
The Tunmarsh Centre
New Directions /R.I.ET
Altmore & Lathom Federation Schools
Altmore Infant School
Lathom Junior School
Agate Momentum Trust
Hallsville Infant School
Hallsville Junior School
Scott Wilkie Primary School
Keir Hardie Primary School
Boleyn Trust
Ravenscroft Primary School
Tollgate Primary School
Cleves Primary School
New City Primary School
Rosetta Primary School
Brampton Manor Trust
Langdon School
Community Schools Trust
Cumberland School
EKO Trust
Earlham Primary School
Gainsborough Primary School

Eleanor Smith Primary
Eleanor Smith KS3 Annexe
Harmony Trust
Hartley Primary School
JFK Stratford (Special School)
JFK Post 16 (Special School)
Sheringham Primary
Upton Cross Primary School
Upton Cross Primary School (Orwell Rd)
Drew Primary School
Leading Learning Trust
Selwyn Primary School
Portway Primary School
Tapscott Learning Trust
Kensington Primary School
Curwen Primary School
Ranelagh Primary School
Other
St Stephens NEC Centre - Nursery
Education Links
Greenhill Centre
London Design an Engineering UTC

SCHOOLS NOT OFFERED CATERING BY JUNIPER VENTURES
NURSERIES
Edith Kerrison Children's Centre, Beckton
Oliver Thomas Children's Centre, East Ham
Primary
Kaizen Primary School
Monega Primary School
Plaistow Primary School
St Michael's Catholic Primary School
Star Primary School
Academies
Bobby Moore Academy
Chobham Academy
St Helen's RC Primary School

St Joachim's RC Primary School
Secondary
Forest Gate Community School
Kingsford Community School
Lister Community School
Plashet School
Sarah Bonnell School
St Angela's Catholic
St Bonaventure's Catholic
Free Schools
East London Science School
Post 16 Schools
Brampton Manor Academy
Building Crafts Academy
London Academy of Excellence
Newham College of Further Education
Newham Collegiate Sixth Form Centre
Newham Sixth Form College
NEWTEC, East London Childcare
Skills for Growth
Special Needs
Stratford Campus