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RESEARCH AND POLICY

# **Learnings and Insights from a Sample of Projects Supported by the Nutrition Fund in Counties Manukau**

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## **Executive Summary**

This report presents the findings of an evaluation of a sample of initiatives in five schools that are supported by the Nutrition Fund in Counties Manukau. The evaluation was commissioned by the Counties Manukau District Health Board “Lets Beat Diabetes” programme of action, and undertaken by the Centre for Health Services Research and Policy from the School of Population Health at the University of Auckland. The evaluation was designed to provide a snapshot of the implementation, progress and outcomes of five initiatives supported by the Nutrition Fund in primary and secondary schools in Counties Manukau.

Specifically, the objectives of the evaluation were to:

- To provide a snapshot of the implementation and progress of Nutrition Fund initiatives in five Schools in Counties Manukau;
- To identify whether the initiatives were implemented as intended, as well as the factors that supported and/or hindered this process;
- To evaluate the outcomes or perceived outcomes of the initiatives, as appropriate;
- To identify key learnings across all five Nutrition Fund initiatives for CMDHB to share with other schools;
- To identify schools perceptions of the Nutrition Fund application process, including barriers and enablers;
- To support evaluation capacity through developing some example evaluation tools or templates; and
- To identify resources that could be developed to support ECEs/schools with the Nutrition Fund application, implementation and/or evaluation.

In line with a mixed methods approach, a number of different sources of information were used to inform the evaluation. A mix of quantitative and qualitative analysis methods were used to understand the information collected. The key findings of the evaluation are presented under summary headings below.

### ***Need for Nutrition Fund supported initiatives***

The current evaluation highlighted the need that is within schools for Nutrition Fund supported initiatives such as those that have been profiled in this evaluation, as well as ongoing evaluation for students and parents. This was evident in:

- The lack of knowledge among students and parents regarding nutrition (e.g., lack of knowledge about vegetables and the main food groups, unhealthy lunch options suggested by students and parents)
- The data which suggested that students’ consumption of healthy foods and water was inadequate (e.g., results from student-led breakfast and water surveys).

- Surveys with the students also suggested that while the 5+ fruit and vegetables per day message appears to be getting through to students, this knowledge does not appear to be reflected in some students' food choices.
- When identifying the need for nutrition-related initiatives within schools, it is important to prioritise; some schools were overly ambitious in what they set out to achieve given the level of internal support that was available to support the development and implementation processes. Enthusiasm on behalf of the students needs to be balanced with realism as to what can be achieved within the given time frame and with the resources and support available within the school.
- It is also important to note that all of those schools considered in this evaluation are located in areas of high deprivation; given that cost is a big driver of food choice, this warrants further investigation as to how significant a factor the cost of food is in determining food choices (of both parents and students).

### ***Consultation and whānau engagement***

The evaluation also highlighted the need for an extensive consultative process from the outset, with both students and parents/whānau, to support implementation of the initiatives.

- Students and staff alike appear to have embraced the various Nutrition Fund initiatives, with a demonstrably high level of ownership of the more successful projects among students and staff.
- The various initiatives appeared to have had relatively less success, however, in engaging with whānau, and securing their commitment to participate in the development and implementation process.
- Engagement of parent/whānau, while a challenge, is an important factor for success. Without this, the messages that students receive in relation to food and nutrition in the home and school settings are not consistent, and parents may feel harassed and disenfranchised.
- The evaluation also highlighted the potential to consider extended family such as grandparents who were most likely to have vegetable gardens and may have more time to spend teaching children if retired.

### ***Implementation***

The evaluation highlighted several factors that enabled or supported the implementation of Nutrition Fund supported initiatives, and several factors that hindered implementation, as follows:

- Key enablers to the successful implementation of initiatives that were identified included:
  - Guidance and support from the DHB through Health Promoting Schools and public health nurses;
  - A high level of student involvement in the project;
  - Planning over time and setting goalposts;
  - Consultation with parents and whānau;
  - Gradual change;

- Identifying choices or modes of implementation that suit students' tastes and lifestyles;
- Support of the school principal and staff;
- Drive, commitment and enthusiasm from all those involved in the project; and
- A whole-school approach.
- Key barriers to the successful implementation of initiatives that were identified included:
  - Limited whānau engagement;
  - Financial constraints;
  - Difficulties in securing and financing adequate facilities/resources and supervisory support;
  - Unforeseen circumstances e.g. staff issues and delays in getting things set up; and
  - Competing (curricular) demands.

### ***Outcomes***

The evaluation highlighted the following key outcomes from the five Nutrition Fund supported initiatives selected for this evaluation. These initiatives have resulted in:

- Increased availability of healthy food choices in schools
- A high level of student engagement, which in turn suggests an impact on student knowledge and attitudes (e.g., a school with 2 gardens already in place at the time of the evaluation had much higher baseline scores than a school with gardens yet to produce vegetables)
- Schools being able to further their vision for a healthy school environment that supports the notion of providing students with the greatest opportunity to learn
- Many schools linked the funding application process and identifying need for an initiative to student projects, and thus supported the development of other student skills (e.g., numeracy, literacy, leadership)
- Given the early stage of many of the initiatives presented in this report at the time of the evaluation, further evaluation at a later date will be required to document:
  - The extent to which the learnings of the project are taken on-board by students and retained over time;
  - The extent to which these learnings are shared with whānau; and
  - The extent to which these learnings affect attitudes and behaviours across settings.
- Further evaluation would also be useful to explore sustainability of initiatives as the current evaluation is slightly limited due to lack of outcome data available from some schools.

Based on the evaluation findings the following recommendations are made:

### ***Nutrition Fund Initiatives***

- Provide schools with realistic guidelines for costing potential Nutrition Fund projects, perhaps in the form of exemplar initiatives with accompanying budgets to increase accessibility to funding for schools.

- Continue to encourage and prioritise student-driven projects with a high level of student, staff and, importantly, whānau engagement, and with links to external agencies from the outset.
- Fund initiatives that seek to engage whanau, including trialling projects that seek to engage extended whanau such as grandparents, as the current evaluation suggests that this is an ongoing challenge and one that would benefit from DHB.
- Open up the channels of communication and foster relationships between schools that are developing or implementing Nutrition Fund initiatives, to identify models that work (e.g., breakfast clubs and changes to school lunch menus), and further, to ensure that the expertise that is housed within these schools is shared with other potential Nutrition Fund schools in the community perhaps through Nutrition Fund Newsletters.

### ***Evaluation***

This evaluation highlighted that schools often have limited capacity to conduct evaluation; as such there is a need to build the capacity of schools for internal review through measures that are easy to implement and take little time. In the present evaluation resources were developed by the evaluation team, however these were still not completed by all schools so the development of the evaluation tools should continue in collaboration with schools. In addition, it is recommended that:

- Grant applicants are provided with clear guidance on what is expected in terms of evaluation. This is an additional burden for schools and clearer guidance or example evaluation tools will help schools provide data that is better suited to identifying the impact of the Nutrition Fund on its intended objectives.
- Schools are supported to use evaluation findings in such a way that allows for the continuous development of these projects.
- The schools who participated in this evaluation also need to be supported to complete the follow-up outcome data collection to provide further outcome data on the impact of the Nutrition Fund.
- More in-depth qualitative data collection to identify learnings to share with other schools would also support the successful implementation of initiatives supported by the Nutrition Fund.

# **1. Introduction**

The present evaluation was commissioned by the Counties Manukau District Health Board “Lets Beat Diabetes” programme of action and was prepared by the Centre for Health Services Research and Policy from the School of Population Health at the University of Auckland in July 2008. The evaluation is designed to provide a snapshot of the implementation, progress and outcomes of a sample of initiatives carried out in schools that are supported by the Nutrition Fund in Counties Manukau. This will allow for the development of a set of recommendations based on the observations made over the course of this evaluation which will promote the continued and successful development and implementation of this initiative.

## **1.1 Aims and Objectives of the Evaluation**

The overarching aim of this evaluation is to evaluate the implementation and outcomes of up to five Nutrition Fund initiatives in schools in Counties Manukau.

More specifically, the objectives are:

- To provide a snapshot of the implementation and progress of the Nutrition Fund initiative in five Schools in Counties Manukau;
- To identify whether the initiatives were implemented as intended, as well as the factors that supported and/or hindered this process;
- To evaluate the outcomes or perceived outcomes of the initiatives, as appropriate;
- To identify key learnings across all five Nutrition Fund initiatives for CMDHB to share with other schools;
- To identify and schools perceptions of the Nutrition Fund application process, including barriers and enablers;
- To support evaluation capacity through developing some example evaluation tools or templates; and
- To identify resources that could be developed to support ECEs/schools with the Nutrition Fund application, implementation and/or evaluation.

## **1.2 Structure of the Report**

This report presents the findings of the evaluation. The aims and objectives of this evaluation and an introduction to the Nutrition Fund are presented in the first chapter of this report. The second chapter will present a brief overview of the methodological approach adopted for the purposes of this evaluation. The third chapter will present the results of the evaluation by school, and the report concludes with a summary of the key findings across the five schools and recommendations in accordance with these findings.

### **1.3 Background**

Physical activity and nutrition have a number of interrelated and complex implications for children's physiological, behavioural, psychological and social health and wellbeing, all of which can influence their 'opportunity to learn' (Clinton, Rensford & Willing, 2007). This combined with current trends in obesity has resulted in a high level of interest within New Zealand in increasing efforts to improve the health and wellbeing of children. Many children and young people in New Zealand are suffering from the effects of poor nutrition which can severely affect children's brain development, brain function, behaviour, psychological and social functioning, and, ultimately, their opportunity to learn (Clinton, et al. 2007). These trends are worrying as poor diet is a key risk factor for obesity, as is physical inactivity (MOH, 2003). In New Zealand, one third of all children are either overweight (21%) or obese (10%; MOH, 2003). Further to this, overweight and obesity are major risk factors for most serious chronic diseases, including Type II Diabetes, cardiovascular disease, stroke and common cancers.

### **1.4 HEHA Nutrition Fund**

Given the aforementioned trends and the documented links between the health and wellbeing of children and their opportunity to learn, targeting the school environment has been identified as a key priority area by the Ministry of Health, under the Healthy Eating Healthy Action – Oranga Kai – Oranga Pūmau (HEHA) strategy. Schools are also considered to provide good access to children and young people from a wide range of ethnic and socio-economic status groups (Neumark-Sztainer & Story, 1997). In Counties Manukau, activity is being driven through initiatives such as Let's Beat Diabetes and HEHA, reflecting the increased focus on providing students with access to environments that support healthy food choices to increase their opportunity to learn.

The Nutrition Fund, initiated in early 2007 to coincide with the beginning of the first school term, has been made available by the Ministry of Health as one arm of its HEHA strategy. The Nutrition Fund for Counties Manukau offers \$268,000 per year to support professional development for schools and ECES services so they can better *establish sustainable healthy eating environments* where children and young people are *offered only healthy food and drink*. The Nutrition Fund also aims to encourage children and young people to make their own healthy choices. The initiative is designed to encourage early childhood education services and schools to think about their whole school environment, work alongside other schools, and involve students in planning and decision-making. The Nutrition Fund builds on existing initiatives in the school and early childhood settings including Health Promoting Schools and Fruit in Schools.

Applications to the Nutrition Fund are assessed against criteria developed nationally for the Nutrition Fund. In Counties Manukau, an inter-sectoral Nutrition Funding panel (representing the school and ECES sectors; health and nutrition interests) considers applications according to established criteria. In Counties Manukau the funding priority is given to initiatives that:

- Involve high need ECES and/or schools (i.e., reducing inequalities of health outcomes by prioritising Maori, Pacific and low-income population groups)
- Support sustainable change;
- Demonstrate links to the community;
- Have a whole ECES/ school community approach;
- Are student-led;
- Are innovative; and
- Support and promote the Food and Beverage Classification System.

## **2. Methodology**

The time frame and needs of the DHB required a timely and focussed insight into a sample of projects supported by the HEHA Nutrition Fund in Counties Manukau. Subsequently an in-depth evaluation of the projects was not feasible; instead, this report provides a snap-shot of the implementation and progress of five initiatives supported by the Nutrition Fund initiative in schools in Counties Manukau. This is designed to provide an overview of progress to date, and to identify a set of recommendations so that the DHB can continue to improve how it works with and supports its local schools. The DHB also required a specific focus on outcomes data, as well as establishing baseline measures with schools who had only just received their grant. As a consequence, this report reflects the first phase of the Nutrition Fund evaluation and recommendations are made to continue to support schools to provide the DHB with feedback on their progress.

A mixed methodology was proposed as the most appropriate means of successfully implementing the evaluation. Mixed methods inquiry deliberately pulls together different research methods designed to collect different kinds of information; it utilises both qualitative and quantitative methods of data collection and analysis in parallel (Greene & Caracelli, 1997). A mixed method design was selected for the evaluation of this programme because of the advantages inherent in this kind of approach, as outlined below:

- It allows for testing of the consistency of findings obtained through different research instruments;
- Results obtained through different methods may clarify and complement results obtained through a different research avenue;
- Results from one method may shape subsequent research processes and methods;
- It may stimulate the generation of new research questions, or challenge the results obtained through one method, thus facilitating a more comprehensive evaluation; and
- By exploring specific features of each method, the richness and detail of the evaluation are enhanced.

### **2.1 Selection of Schools**

The selection of the five schools that participated in this evaluation was driven by the DHB to reflect the different types of Nutrition Fund initiatives at different stages of implementation, and different school types. Three primary schools, one intermediate school and one senior school are included in this evaluation. Table 1 presents the

types of Nutrition Fund initiatives being implemented in the schools that were selected.

**Table 1: Table of Nutrition Fund Initiatives**

<b>School</b>	<b>School Type</b>	<b>Type of Initiative</b>	<b>Nutrition Fund Supported</b>	<b>Initiative Status</b>
Primary School A	Roll: 503 Decile: One	Purpose-Built Lunchroom	Kitchen utensils	Completed
Primary School B	Roll: 260 Decile: One	Vegetable Garden and Mini Orchard	Plants, gardening equipment, fertiliser	Being Implemented
Primary School C	Roll: 921 Decile: One	Vegetable Garden	Construction materials, plants, fertiliser and topsoil, labour, professional gardener	In Development
Intermediate School A	Roll: 256 Decile: One	Upgrade of Water Fountains	Pedestal fountains, drinking taps, hose tap, and associated installation costs	Completed
Senior School A	Roll: 692 Decile: One	Breakfast Club, Nutrition Education and Edible Garden.	Utensils, equipment and resources	Being Implemented

## 2.2 Data Collection

The schools were invited to participate in the evaluation by the Nutrition Fund Project Manager, and were subsequently contacted by the evaluation team. The evaluation team met with the project leader from each of the five schools to establish rapport, explain the evaluation objectives and to identify an individualised evaluation plan, which provided a list of the evaluation tasks to be undertaken with each school.

In line with the mixed methods approach described previously, a variety of data sources were used to inform the evaluation (Table 2). The data sources collected for each school was dependent on:

- the allocation date of the Nutrition Fund grant; and

- the schools provision of data to the evaluation team.

Where schools had already received and implemented the Nutrition Fund, the evaluation team was dependent on existing data, as well as student and teacher experiences and perceptions of the implementation and impact of the Nutrition Fund in their school. Where schools had not yet implemented the grant, the evaluation team supported the schools to collect baseline data.

### 2.2.1 Existing Data Sources

The evaluation team utilised a variety of different data sets that the schools had collected over the course of the initiative and made available to the evaluation team for the purposes of the evaluation. These included survey data, food sales data, student participation data, as well as invoices, photographs and other documentation which detailed the progress of the initiative over time.

### 2.2.2 Additional Data Sources

To supplement the existing data that was provided by the schools, the evaluation team consulted extensively with the schools and developed evaluation tools to gain greater insight into the progress and outcomes of the various initiatives, as outlined below:

- An Evaluation form was developed and distributed to all schools, which was designed to gauge the degree to which the initiatives were implemented as intended, and to survey the project leaders' perceptions of any barriers or enablers to the implementation process (Appendix A).
- A survey was also developed in consultation with the project leaders from Primary Schools B and C which was designed to assess students' knowledge of nutrition and gardening concepts. This survey was administered to gauge students' baseline knowledge, but it is anticipated that this same survey will be re-administered at a later date as a measure of the impact of the initiatives (Appendix B).
- Further, the evaluation team conducted a number of site visits to observe discussions led by the student health councils and project leaders regarding their Nutrition Fund project, and to observe any changes in the progress of the initiative.

**Table 2: Data Collection Methods used**

<b>Data Source</b>	<b>Number of Schools (n=5)</b>
Nutrition Fund application form	5
Photographs	2
Comments and feedback from the project leader and students	5
Invoices	1
Minutes, newsletters and other documentation	2
Evaluation form (see Appendix A)	1
Needs Analysis Survey (student)	2

Baseline Survey (student)	2
Needs Analysis Survey (parent)	2
Outcomes Survey (teacher)	1
Food order records	1
Participation data (one school only due to school-wide approach adopted by the four remaining schools)	1

### **2.3 Data Analysis**

Any existing documentation outlining each school’s Nutrition Fund initiative, its implementation, its progress and outcomes that was made available to the evaluation team was analysed by way of a documentary analysis. Documentary analysis is a systematic process that can identify the individuals and activities involved in a programme or intervention (Garman, 1982). Documentary analysis was used in the current evaluation to identify recurring themes across the five schools. Quantitative data sources, such as results from the baseline survey and food order data, were analysed using simple descriptive statistics. Inferential statistics were not possible as all survey data was baseline only.

### 3. Results

#### 3.1 Primary School A

##### 3.1.1 School Profile

<b>School Type</b>	Coeducational state primary school
<b>Roll</b>	503 pupils
<b>Decile</b>	One
<b>Ethnic Makeup</b>	Nearly two thirds Pasifika, one third Māori, and the remainder other ethnicities
<b>Ethos / Culture</b>	The school has adopted a holistic approach to teaching, which emphasises the importance of student behaviour and health in influencing achievement outcomes. This holistic approach extends beyond students to their family/whānau and the wider community.

##### 3.1.2 Initiative: Outfitting a Purpose-built Lunchroom

Primary School A used the Nutrition Fund grant to outfit a purpose-built lunchroom with equipment to support more healthy lunch provision in the school. The lunchroom allows for the on-site preparation of a wider variety of healthy lunch foods; the availability of which is especially pertinent given the close proximity of a dairy and takeaway bar, and the high proportion of students who purchase their lunch at school each day (approximately one fifth of students).

In their application for funding the school requested \$5220, which was to cover the cost of kitchen utensils for the new lunchroom (completed in October 2007), the capital costs of which (including construction, employment of a trained chef, and ongoing administration costs) were funded by the school. It was envisaged that by preparing the food on-site, costs could be kept to a minimum, and the menu could be modified to ensure it contained the affordable, healthy options that whānau and students had indicated they would like to see.

##### 3.1.3 Data Sources

The following data sources were used to inform the evaluation of this initiative:

###### *Development of the Initiative*

- Nutrition Fund application form;
- Survey data on students' lunch preferences; and

- Minutes from tasting session with student council.

#### Implementation of the Initiative

- Comments and feedback from the project leader and the student health team;
- School newsletters; and
- Minutes and other documentation from Student Council meetings.

#### Preliminary Outcomes

- Photos of the new lunchroom;
- Comments and feedback from the project leader and the student health team; and
- Food order data for Term 2 in both 2007 (pre-lunchroom) and 2008 (post-lunchroom).

### **3.1.4 Initiative Development**

#### **3.1.4.1 Identifying the need for this initiative**

Some of the key issues that identified the need for the initiative included:

- The large number of children who ordered unhealthy food from school for lunch.
- The close proximity of a dairy and takeaway bar to the school (just outside the school gates).

#### **3.1.4.2 Consultation**

The school underwent an intensive consultation process in order to determine what new foods should be offered on the new lunch menu. Consultation occurred in a number of ways including:

1. Student and parent survey
2. Tasting session with student council

#### Student and parent survey

The school conducted a survey, designed and collated by members of the student council. This survey was distributed to the entire student body and to parents. Parents and whānau were included in the consultation process; this was in recognition of a backlash from both parents and students that occurred after the school instituted an outright ban on pies prior to the lunchroom initiative. The project leader surmised that a graduated approach, where the less healthy foods are slowly phased out (as exemplified by their lunchroom initiative), could prove more effective and acceptable.

The survey indicated that:

- Chicken was the preferred filling option for pitas, sandwiches and filled rolls;
- The students' preference for a hot option was either pizza or a hot dog;
- Small cookies and mini muffins were the most popular snacks; and
- Juice and flavoured water were the most commonly preferred beverages.

In addition to this, students and parents were given the opportunity to suggest food items for the new lunchroom menu. While some of the suggestions were nutritionally sound (e.g., sushi, quiche, and baked potatoes), many of the suggestions, from both parents and students, did not comply with the new Food and Nutrition guidelines (e.g., pies, burgers, nachos, donuts). Survey results showed that the majority of parents and students would be willing to pay up to \$3 for lunch purchased from the lunchroom, however some indicated that they would pay up to \$5.

#### Tasting session with student council

A tasting session was also held with the student council. Students sampled healthy lunch options, including muesli bars, muffins, yoghurt, pizza bread, potato top pies, and fruit drinks, and then rated the foods according to which ones tasted the best. Further, when making their selections for the lunch menu, the children were encouraged to think about appropriate portion sizes, cost-effectiveness, and environmentally-friendly packaging.

### **3.1.5 Initiative Implementation**

The school received the grant at the end of 2007. The funds were used to purchase utensils and equipment such as:

- Cutlery;
- Knives;
- Microwaves;
- Chopping boards;
- A hot plate; and
- Commercial-grade saucepans, bake ware and storage containers.

In addition to the Nutrition Fund grant, the school applied to the Lion foundation for whiteware to equip the new lunchroom, while the capital costs of the construction and wages for the lunchroom employee have been covered by the school.

The school had initially intended to produce all of the food available at the school themselves. Due to challenges in appointing an appropriate candidate to manage the lunchroom however, the school continues to order some of the provided at the school. It is useful to note, however, that the school is still working towards providing only food items prepared on-site, with the support of their newly appointed full time staff member. Comments from staff however, did state that the food choices currently available are healthier, and the provision of pastry pies has been reduced to one day

per week. This was achieved through gradual change and the support of the student council:

*“Because of the response we had before; we had to do it a lot slower...we just started to have them (pies) less available...”*

### **3.1.5.1 Student Leadership**

In keeping with the school’s focus on student-centred practice, there was a high level of student involvement in the project from the outset. The project team, which consists of student councillors and staff, have worked alongside other agencies such as Health Promoting Schools, Sisters of Mercy and Public Health Nurses who provided guidance and support throughout the development and implementation of the initiative. On Thursday 6<sup>th</sup> March the new lunch menu for school lunch orders was made available to students, with notification of parents by way of reminders in the school newsletter. This involvement of parents/whānau and students was considered to be critical to the success of the changes to the school menu.

### **3.1.5.2 Sustainability**

The project team have taken steps to ensure the sustainability of the initiative by providing for ongoing professional development for staff, ongoing health education and promotion within the classroom, as well as ongoing education for parents and whānau in the form of information that goes out in newsletters, is displayed on notice boards around the school, and is conveyed via presentations to students and parents. Further, the school councillors are involved in actively promoting healthy choices through facilitating various activities, particularly at school assemblies. Teacher comments suggested that by educating the students while at the same time fostering a sense of self-reliance, the students will be empowered to make healthy choices, and this knowledge will translate into action, within both the school and wider community.

### **3.1.6 Preliminary Outcomes**

This section explores the outcomes of the Nutrition Fund supported initiative using data provided by the school, as well as additional data collected to identify the perceptions and experiences of the teachers and students involved with the project. A summary of the key findings is presented in Section 3.1.8.

The implementation of the Nutrition fund at Primary School A has resulted in:

- Increased access to a wide range of healthy lunch options, some of which are prepared on-site in the purpose-built lunchroom, by a fulltime lunchroom staff member.

- All food offered on the new menu complies with the new Food and Nutrition guidelines, the pricing of some of the foods was still considered to be slightly too expensive by some students.
- There has been a reduction in the amount of plastic that is used to wrap the foods, to support the school's environmental policy.

### Purchasing Equipment

Presented below is a selection of photographs documenting the equipment that was purchased using the Nutrition Fund grant.



Figure 1: Food preparation area in the Primary School A purpose-built lunchroom



Figure 2: New microwaves in the Primary School A purpose-built lunchroom

### Analysis of lunch orders

An analysis of the lunch orders from Term 2 2007, prior to the opening of the lunchroom, revealed a relatively equal number of unhealthy and healthy choices being purchased at school each day (Figure 3).

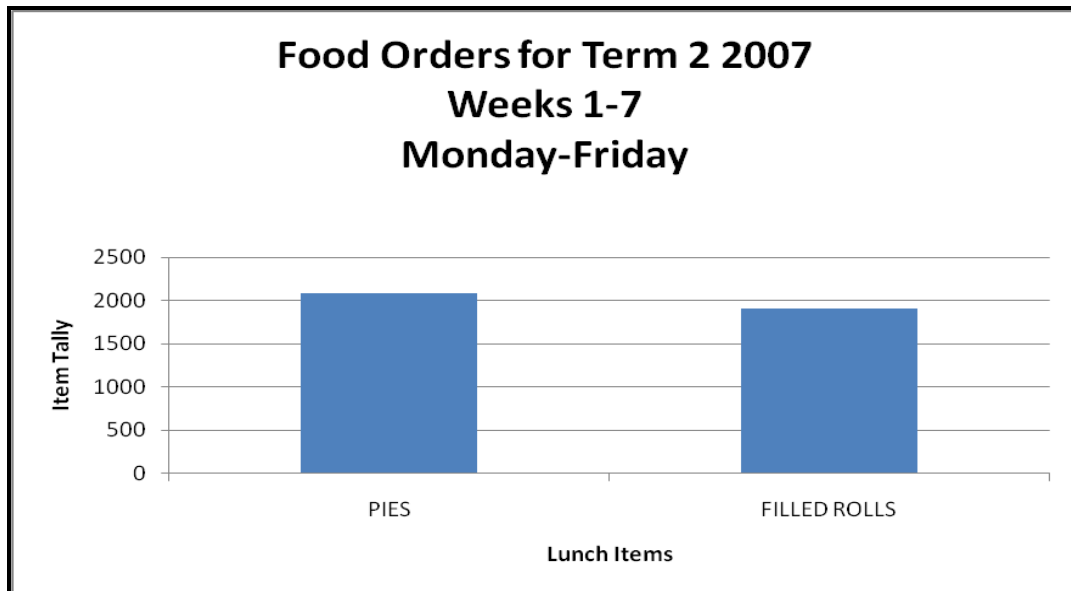


Figure 3: Food Orders for Term 2 2007, Monday-Friday

The data from 2007 and 2008 are not directly comparable, due to differences in the packaging of items (i.e., foods are sold together in combos as opposed to individually), and in the availability of these items throughout the week. However an analysis of the food orders data from Term 2 2008 suggested that while the healthier options were selling well, the volume of sales had dropped somewhat following the institution of the new lunch menu. It may be that the project leads observation that sales had remained constant was based on takings from items purchased from the new lunchroom, as these items are priced slightly higher than those from the previous year's menu.

The most popular food item, of those available from Monday-Thursday was the Hawaiian Pizza Bread and Go Gurt combination, followed by Juice, and Filled Rolls. The least popular items were the Chicken Wrap and Muffin combination and the Lamb Roti and Go Gurt combination. On Fridays, children have the option of purchasing a more limited range of food items. The food item of the least nutritional value, the Hot Dog, was the preferred lunch item on a Friday, with significantly fewer of the healthier lunch items, the Filled Roll and the Lamb Roti with Go Gurt, being purchased. The chocolate flavoured Calci-Yum milk was also a popular item among students. However, as these options were only available on Fridays, this pattern may reflect a tendency for the students to practice moderation, selecting foods high in nutritional value throughout the week, and then having a "treat day" on Fridays.

Equally, the students may purchase a hot dog every day, if given the opportunity. This finding highlights the importance of limiting unhealthy options that are available to students for purchase.

#### Teacher Feedback

Key comments from staff involved with the initiative identified the following barriers and enablers to implementation:

- Student and whanau engagement is critical to success
- Changes need to be implemented gradually
- Education for staff and students is important
- Having staff as role models supports change in behaviours
- Identifying foods that are healthy and popular with students should be an ongoing process

#### Student Feedback

Since the healthier options have been made available at school, members of the student council, who have overseen the project from conception in collaboration with staff, noted that students in their school are more aware of the elements that make up a healthy lunchbox (e.g., yoghurt, sandwiches, and fruit). They also noted that they were serving as positive role models for the younger children in the school who look up to the more senior students, as were the staff members who had adopted a “walk the talk” philosophy, and committed to setting a good example to the students by making healthy choices themselves. They also identified the following as enablers to the implementation of the initiative: teamwork amongst students, teacher support, and a capable and committed lunch-lady.

The students said they would recommend having a healthy lunchroom to other schools because:

- It provides students with the option to be healthy;
- It is cost effective;
- It is a clean, hygienic food environment;
- Students can buy tasty, healthy food from school instead of the dairy; and
- It has the potential to lead to a healthier, more active student body.

### **3.1.7 Summary and Future Direction**

The purpose-built lunchroom was developed to support the schools overall vision for creating a school environment that promotes healthy lifestyle choices.

#### Summary of Key Findings

- The students at Primary School A now have access to a wide range of healthy lunch options, the majority of which are prepared on-site in the purpose-built lunchroom.
- The new, healthier lunch items are selling well, which is likely due to the consultation that was carried out with students and parents rather than a school-led change.
- Students and staff have noticed changes in the decision making of the students with students bringing healthier lunches from home, as well as purchasing the healthy lunch options from school.
- Education about healthy choices for students, parents/whanau, and staff is used to support change and sustainability.
- Other issues for consideration when evaluating Primary School A's initiative include the following:
  - Foods that are prepared and sold in the lunchroom need to be not only healthy, but also the kinds of foods that children and young people are prepared to eat.
  - Changes in staff in the lunchroom were noted to have caused disruption to the implementation of the initiative.

### Future Directions

- The next step for Primary School A is to expand the range of items that are available from the lunchroom and to buy in fewer items prepared off-site. At the time of this evaluation, much of the food being sold in the new lunchroom was still being brought in from providers outside the school. Further evaluation will be warranted at a later date when all items are being prepared on-site, as this may reduce the cost of food choices and therefore increase access to healthy choices.
- The food order data that was made available to the evaluation team from 2007 and 2008 was not directly comparable due to a variety of factors including differences in the size of combos, pricing, and the availability of different items on different days. A reanalysis of food order data at a later stage in the implementation of the initiative may be beneficial to identify whether students' preferences for healthy choices are being impacted by the new lunch menu.
- A survey of parents and students at a later date should be used to identify the extent to which this learning has been transferred to parents and whānau, and the wider community, and whether this learning reliably translates into behaviour change.

## **3.2 Primary School B**

### **3.2.1 School Profile**

<b>School Type</b>	Coeducational state primary school
<b>Roll</b>	260 pupils

<b>Decile</b>	One
<b>Ethnic Makeup</b>	26% Maori, 49% Pacific, 25% NZ European or other ethnicity
<b>Ethos / Culture</b>	The school's motto is Kia Kotahitanga Tatou, which translates as <i>working together- work as one.</i>

### 3.2.2 Initiative: 'The Good Food Garden'

Primary School B used the Nutrition Fund grant to establish vegetable gardens and a mini-orchard in the school. The aim was to provide a means to increase children's exposure to healthy foods, giving the student's and their families an opportunity to taste fruit and vegetables which they might not have tasted before. It was anticipated that these tasting sessions would serve as an impetus to get families preparing and eating a wider range of healthier foods at home on a regular basis.

Further, it was anticipated that teachers would incorporate lessons into their classroom programmes in order to build the confidence of student's in their ability to grow and prepare healthy foods. The lessons included how to grow, produce and maintain gardens, as well as how to prepare the foods that are grown in the garden. It was hoped that this knowledge base and skill set would then impact on the wider community.

In their initial application for funding the school had requested \$9,973, which was to cover the construction of the gardens including composting and soil preparation. Ultimately, after revising their proposal, with support from the Nutrition Fund Project manager at the DHB, the school received \$1850, which was designated for spending on various vegetables and plants for the mini orchard, as well as gardening tools and fertilizer to maintain the garden and mini orchard.

### 3.2.3 Data Sources

The following data sources were used to inform the evaluation of this initiative:

#### Development of the Initiative

- Nutrition Fund application form;
- Parent/student surveys indexing perceived need for health education in schools; and
- Comments and feedback from the project leader.

#### Implementation of the Initiative

- Invoices of produce; and
- Comments and feedback from the project leader.

#### Preliminary Outcomes

- Photos of the new garden plots;

- Comments and feedback from the project leader;
- Baseline survey indexing children's knowledge of fruit and vegetables, growing produce and gardening see Appendix B.

### **3.2.4 Initiative Development**

#### **3.2.4.1 Identifying the need for this initiative**

Some of the key issues that identified the need for the initiative included the following.

- Through the schools involvement in the Fruit in Schools programme, it became evident that many of the students had not tasted certain fruits and vegetables before.
- The school noted that a large number of students were coming to school with no lunch. The school saw the vegetable garden and the mini orchard as a means of providing healthy lunches to those children who would otherwise go without.
- A health promotion survey was conducted that indicated that most parents/whānau were concerned with their child's diet, and would like to see the provision of greater education around healthy eating.

The school recognised that the initiative needed to target not only the students, but the whole school community, parents and wider whānau in order to have a significant and sustainable impact on practices and behaviour around nutrition.

### **3.2.5 Initiative Implementation**

The school received the grant at the end of 2007. Although it was initially envisaged that the construction of the garden and mini orchard would begin in early 2008, this was delayed due to the need to raise funds to provide for the construction of the garden (for example, the raising of the vegetable garden including edging, fill and labour costs). An opportunity arose during the holidays between school terms one and two, and this was capitalised on, even though it precluded the involvement of the student body as planned.

#### **3.2.5.1 Student Leadership**

Although the students were not involved in the building of the vegetable garden, they were involved in the planting process, as were staff and whānau. The high level of student and staff involvement from the outset was designed to secure the support of the school community and maximise their sense of ownership of the garden/ mini orchard.

Prior to the planting of the gardens, the students had 2 weeks of lessons around growing produce and active maintenance of gardens, as well as how to prepare the foods that are cultivated in the gardens. On World Environment Day, the school planted their vegetables; each class (12 in total) chose a vegetable to plant. Parents and whānau were also invited to participate, however only 5 or so turned out on the day. During this ceremony the garden was blessed by the schools Kaumatua.

Updates are published in the school newsletters; this is designed to promote ongoing whānau engagement. Parents will also be consulted for advice based on their own horticultural experiences, and will be invited to attend Home School Partnership meetings regarding the Good Food Garden.

### **3.2.5.2 Sustainability**

During the planning days for 2008, staff were consulted as to how best to incorporate the key learning objectives for the project into the classroom programmes. It was intended that the learnings from the project be encompassed by all curriculum areas, such that the learning is ongoing and occurring at a deeper level. There is a committee dedicated to the initiative that has a representative from each classroom, as well as a teacher from each syndicate, so that the junior, middle and senior schools each have a point of contact and someone to push the project along. This whole-school approach is thought to enhance the sustainability of the initiative.

Further, some of the grant money is remaining, and has been set aside to provide for some plants for the next season, again with a view to enhancing the sustainability of the initiative.

### **3.2.6 Preliminary Outcomes**

This section explores the outcomes of the Nutrition Fund supported initiative using data provided by the school, as well as additional data collected to identify the perceptions and experiences of the teachers and students involved with the project. A summary of the key findings is presented in Section 3.2.8.

Presented below is a selection of photographs documenting the growth of the Good Food garden mini orchard.



Figure 4: Herb garden at Primary School B



Figure 5: Vegetable beds at Primary School B



Figure 6: Mini orchard at Primary School B

### Teacher Feedback

The implementation of the Nutrition fund at Primary School B has resulted in:

- The students at Primary School B are actively involved in maintaining the garden to promote a continued sense of ownership of the Good Food Garden; monitoring the growth of their vegetables, weeding the garden, and writing in the plant diary (which includes photos and descriptions of what they can see).
- Staff are also on board, and have displayed enthusiasm for the project. It is anticipated that parents will be invited to provide input into the garden after school.
- There has been a high degree of uptake by the students of the learnings from the project that have been incorporated into the classroom programmes, particularly by those older students.
- Students are retaining a lot of the information related to gardening and healthy eating, to an extent that has surpassed her expectations. It is the Project Leaders belief that because the students have consistently been a part of the process, they have more interest in the project.
- As a group parents/whānau had a considerable wealth of gardening expertise.
- Enablers to implementation of the initiative: student, staff and whānau involvement from the outset; support with application for funding from the Nutrition Fund Project manager at the DHB.
- Barriers to implementation of the initiative: students were not able to be involved in building the vegetable beds as had been envisaged.
- It was also noted that it took a long time to get the garden beds set up, and as such it may be necessary to procure some additional funding at a later stage.

### Baseline survey

The results of the baseline survey indicated that of those students surveyed (n=201), 73% reported that at least one member of their extended whānau had a vegetable garden. On average there was one vegetable garden within respondents' extended whānau, with the gardens belonging most frequently to grandparents, Mum/Dad, and Aunty/Uncle (Figure 7). Just over one quarter of students did not have access to a vegetable garden within their extended family (n=48).

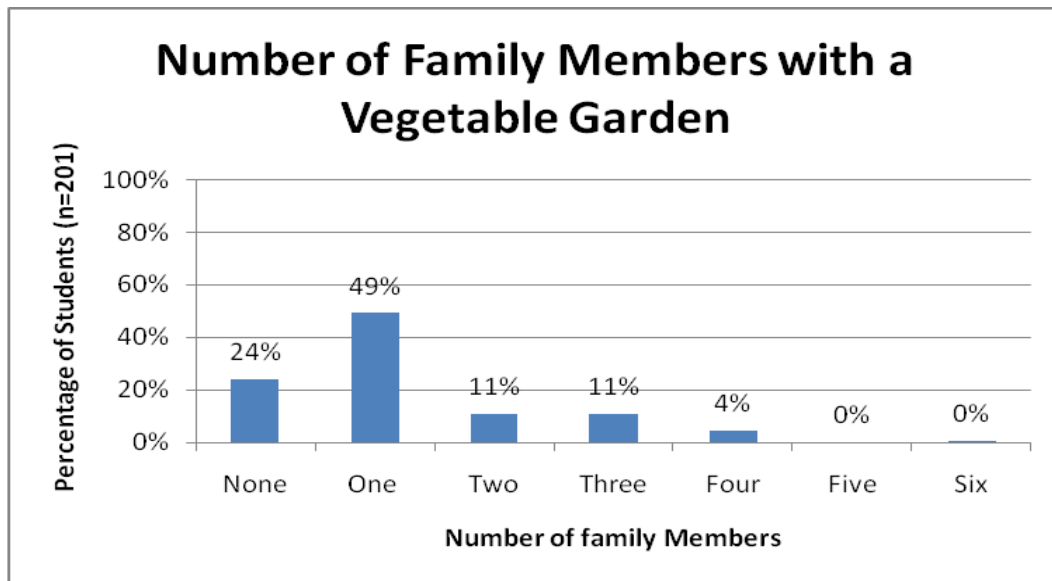


Figure 7: Number of family members with a vegetable garden- Primary School B

### Growing Plants

- Students had a reasonably good knowledge of the various elements needed for plant growth, however this knowledge appeared to vary as a function of age, with older students (aged 9-13 years) having a more comprehensive knowledge of these requirements than younger students (aged 4-9 years).
- 52% of students (n=105) could correctly identify the three listed elements that are important for plant growth (water, sunlight and soil), 21% (n=43) correctly identified one element, and a further 19% (n=39) could identify just one element. 7% (n=14) were not able to correctly identify an element necessary for plant growth (Figure 8).

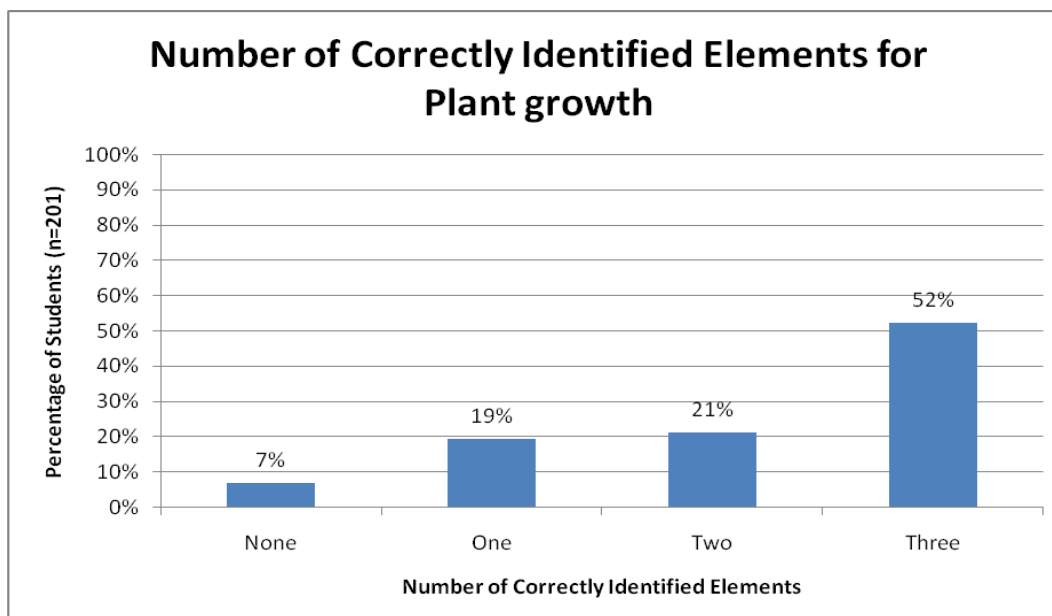


Figure 8: Number of correctly identified elements for plant growth- Primary School B

### Knowledge of and Preferences for Vegetables

- Respondents were relatively uniform in their preference for preparation methods of vegetables. Most students reported that they preferred to eat vegetables in the form of sandwiches, salads and soups (46%, 44% and 55% respectively). This was followed by roast and boiled vegetables, stir-fried vegetables, raw vegetables, and vegetable quiche (Figure 9).

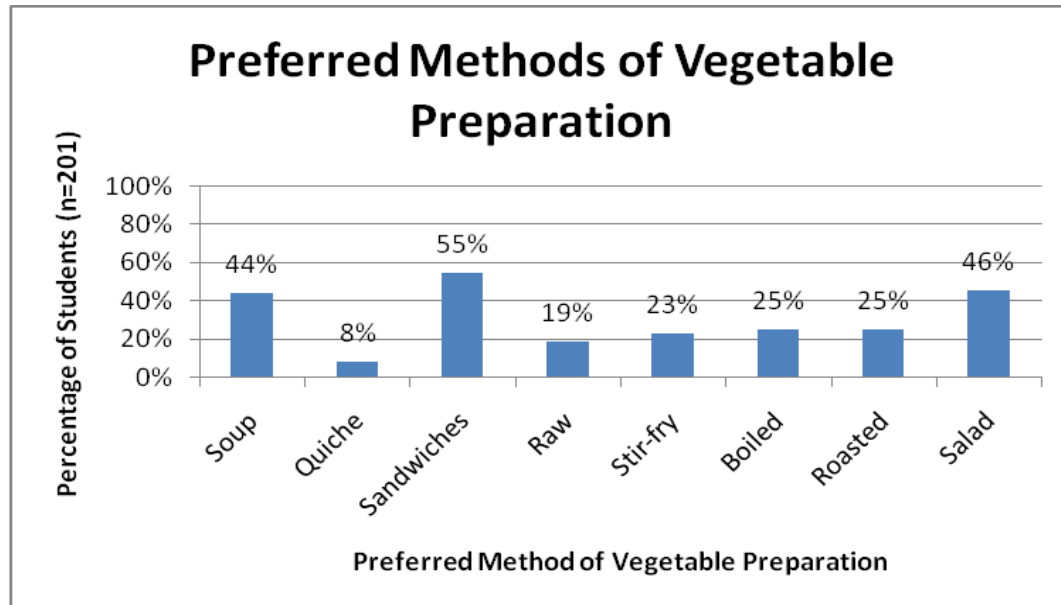


Figure 9: Preferred methods of vegetable preparation- Primary School B

- On average, students were able to correctly identify approximately 6 vegetables out of a list of 12 given pictures, although again this knowledge varied as a function of age, with older students more adept than those younger students.
- Over half of the students could identify a picture of the following vegetables: carrot (93%), tomato (88%), potato (75%), broccoli (60%), and lettuce (51%).
- Less than half of the students were able to identify pictures of the following vegetables: cauliflower (47%), capsicum (45%), celery (43%), beans (41%), pak choy (12%), spinach (8%) and garlic (4%) (Figure 10).

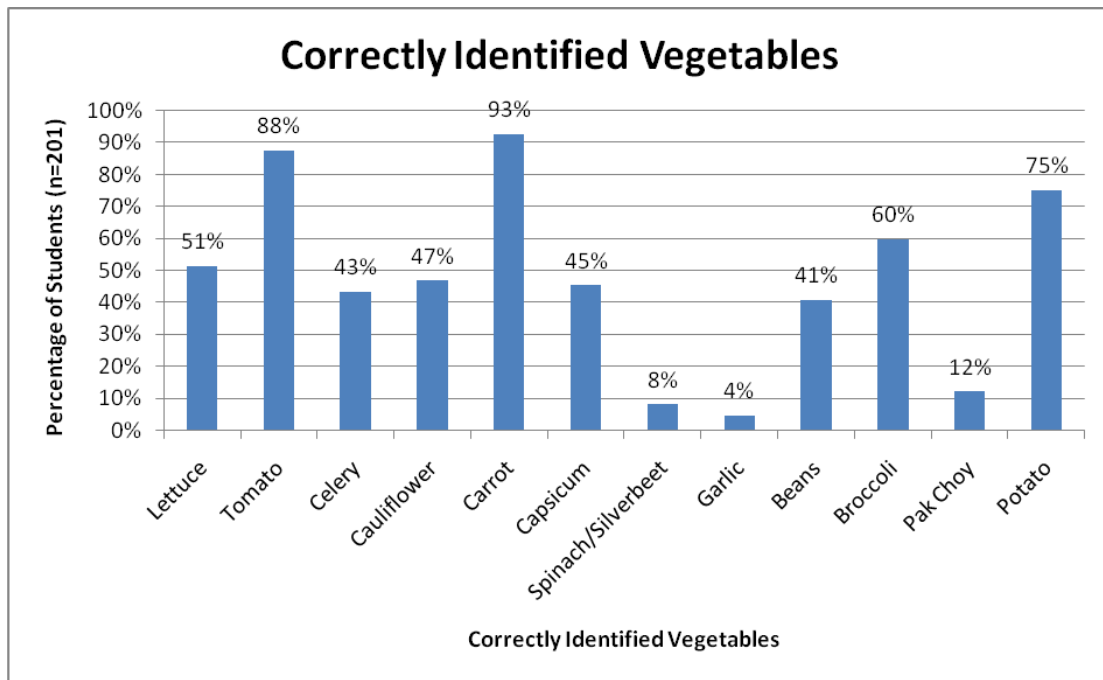


Figure 10: Number of correctly identified vegetables- Primary School B

### Knowledge of Main Food Groups

- Although students appeared to have a reasonable knowledge of the recommended number of servings of fruit and vegetables per day, they had more difficulty with the three other main food groups (Figure 11).
- Modal data is presented in Figure 11 as it illustrates that the majority of students underestimated the number of daily servings of each of the three other food groups that contribute to a healthy diet.
- 21% of students (n=42) indicated that the recommended daily quota of fish, chicken, eggs or meat alternatives was zero servings.
- 24% of students (n=48) indicated that the recommended daily quota of milk, yoghurt, cheese and ice cream was zero servings, while 31% of students (n=62) indicated the recommended daily quota was one serving.
- 21% of students (n=44) indicated that the recommended daily quota of breads, cereals, rice and pasta was zero servings, while 28% of students (n=56) indicated the recommended daily quota was two servings.
- This suggests that although students have a good understanding of the “5+ fruit and vegetables a day” message, future student education may need to be targeted towards increasing students’ knowledge of the three other main food groups.

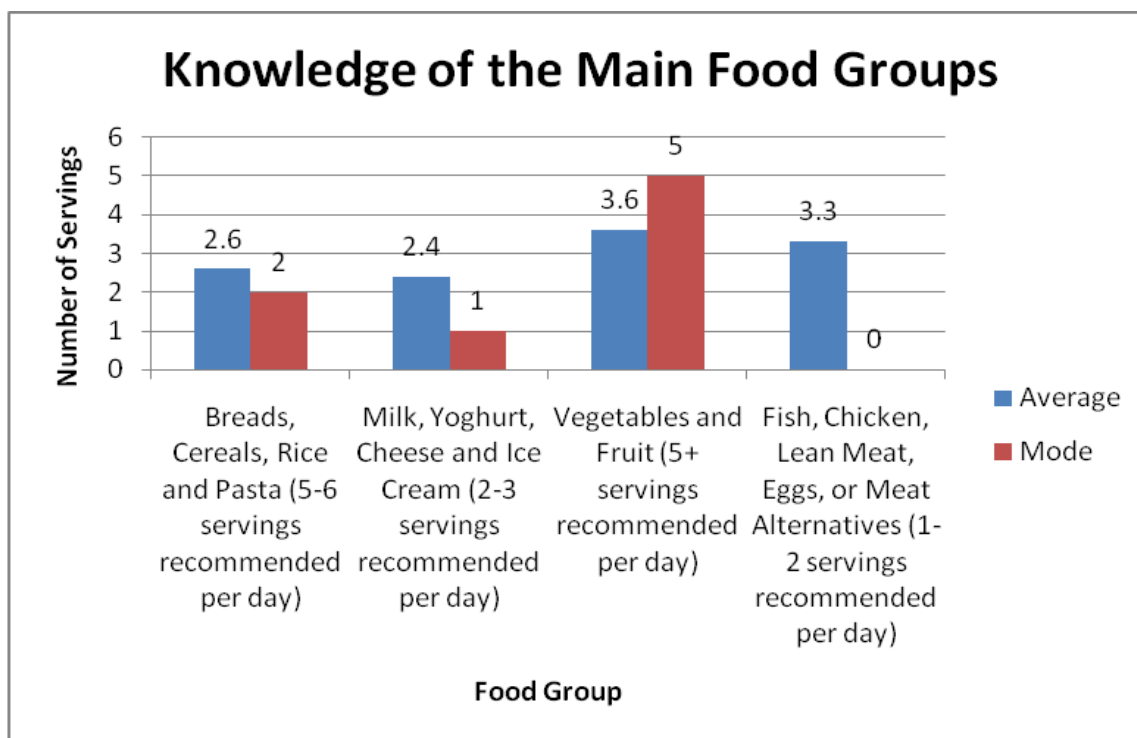


Figure 11: Knowledge of the main food groups: Primary School B

### 3.2.7 Summary and Future Direction

The Good Food Garden was developed to drive the schools overall vision for creating a school environment that promotes healthy lifestyle choices. The following is a summary of the key findings from the evaluation of this initiative:

#### Summary of Key Findings

- The school community have embraced the project, with students and staff both actively contributing to the planning, planting and maintenance of the garden and mini orchard. This has resulted in a strong sense of ownership of the project among the school community.
- The level of whānau involvement appears to have been more limited, despite the schools efforts to include them in all stages of the initiative.
- The students have been exposed to new fruits and vegetables and planting methods.
- Although students have a good understanding of the “5+ fruit and vegetables a day” message, future student education may need to be targeted towards increasing students’ knowledge of the three other main food groups.

#### Future Directions

- The vegetable plants and fruit trees are still in the early stages of development, and as such are not ready for cultivation on a large scale. Consequently, while the students of Primary School B may have had increased exposure to these fruits and vegetables, they may not have had the opportunity to sample the produce.

- Given the early stage of the initiative, only baseline data was collected to inform this evaluation. A survey of parents and students at a later date should be used to identify the extent to which this learning has been retained, and the extent to which it has transferred to parents/whānau, and the wider community.
- The sustainability of the initiative has been prioritised throughout the development and implementation processes; there is a committee dedicated to its ongoing development and maintenance, with representation from staff and students from all syndicates.
- The team is currently developing a long term plan for the garden, and are evaluating the feasibility of building an on-site test kitchen to prepare the produce that is grown.

### 3.3 Primary School C

#### 3.3.1 School Profile

<b>School Type</b>	Coeducational state primary school
<b>Roll</b>	921 pupils
<b>Decile</b>	One
<b>Ethnic Makeup</b>	40.2% Pasifika, 52.3% Māori, 2.4% NZ European, 5.1% other ethnicities
<b>Ethos / Culture</b>	The school has a commitment to promoting total health and wellbeing of its students, as reflected its involvement with the Health Promoting Schools and Fruit in Schools programmes. The school's Mission Statement reads as follows: "At <i>Primary School C</i> we acknowledge, value and foster the diversity of our school community. We strive for excellence within a safe and caring environment".

#### 3.3.2 Initiative: Establishing Vegetable Gardens

Primary School C intends to use the Nutrition Fund grant to establish vegetable gardens throughout the school (one per classroom). In 2007, the school received a grant of \$600 from the Manukau City Council which was used to establish 3 large vegetable gardens. These gardens were a huge success, with children collecting and preparing vegetables from these gardens to cook in the classroom. The school intends to use the Nutrition Fund grant to establish vegetable gardens for each classroom within the school.

The idea behind this initiative is that through students' participation throughout the development and implementation of the project, students' awareness of, and exposure to, different types of vegetables (and healthy eating in general) will be increased, and that these learnings and skills will translate to the home setting where they can be shared with whānau.

### **3.3.3 Data Sources**

The number of data sources that could be collected for Primary School C was limited due to the fact that the initiative had not yet been implemented. Consequently, the following data sources were used to inform the evaluation of this initiative:

#### *Development of the Initiative*

- Nutrition Fund application form.

#### *Implementation of the Initiative*

- Nutrition Fund application form; and
- Comments and feedback from the project leader;

#### *Preliminary Outcomes*

- Baseline survey indexing children's knowledge of fruit and vegetables, growing produce and gardening (see Appendix B).

### **3.3.4 Initiative Development**

#### **3.3.4.1 Identifying the need for this initiative**

In 2008, a core group of staff involved with the Health Promoting Schools programme, and, independently, the student health team, decided to prioritise nutrition as a major focus within the school community. Given the success of the previously established gardens, the school decided to apply for funding from the Nutrition Fund to further extend the vegetable garden initiative so that each classroom within the school (11 in total), is able to cultivate their own garden box.

In their initial application for funding the school had requested \$10,000, which was to cover the construction of the gardens and the costs of teacher aide time. Ultimately, after revising their proposal, with support from the Nutrition Fund Project manager at the DHB, the school received \$8040, which was designated for spending on the following:

- Timber for garden boxes;
- Fertiliser and topsoil;
- Plants and bulbs; and
- Labour.

### **3.3.5 Initiative Implementation**

The school received the grant on the 24 June 2008. Consequently, at the time of this evaluation, implementation of the initiative had not yet begun. Teachers comments indicated that, in terms of planned implementation, the three large gardens that were established previously are to be divided in half so that each of these gardens will cater to two classrooms.

### **3.3.5.1 Student Leadership**

It is envisaged that the project will be entirely student-led, with students involved in each of the following stages of development:

- Developing an action plan- where will the gardens be planted? When is the optimum time to plant?
- Selecting which vegetables will be planted
- Learning what is required to build and maintain a vegetable garden (e.g., materials, weeding, watering etc.)
- Sourcing materials and building and painting the structures to house the gardens
- Planting and growing produce
- Tending the gardens
- Preparing and tasting vegetables in the classroom which have been grown in the school vegetable gardens (e.g., making sandwiches or filled rolls from the vegetables in the gardens).

Parents and whānau are also to be involved with the project as:

- Some produce will go home with the students allowing families to prepare and taste a wide range of vegetables;
- Cooking demonstrations will be given at school; and
- Reports and updates will go out to parents via the school newsletter.

It is intended that involving parents and whānau throughout the process will encourage them to uptake the key messages about healthy eating, and promote ongoing whānau engagement with respect to their child's health and wellbeing.

Further, it is intended that teachers would link the lessons on how to grow produce and active maintenance of gardens, as well as how to prepare the foods that are grown in the garden, into their classroom programmes within the science, mathematics, writing and health curriculum areas. It is hoped that this knowledge base and skill set will then trickle out to students' wider communities.

### **3.3.5.2 Sustainability**

It is envisaged that regular evaluations will be conducted at the end of each term to monitor the progress of the gardens and the students' involvement in the maintenance of these gardens, with a view to enhancing the sustainability of this initiative.

Provided the initiative is a success, the school will endeavour to share this success with the wider community via contact with other schools, local newspapers, school newsletters, and sharing their experiences on local radio stations.

### **3.3.6 Preliminary Outcomes**

This section explores students' baseline knowledge of the concepts related to Primary School C's Nutrition Fund supported initiative using data provided by the school, as

well as additional data collected to identify the initial perceptions and experiences of the teachers and students involved with the project. A summary of the key findings in presented in Section 3.3.8.

### Baseline survey

In order to assess the impact of the gardens on student knowledge of vegetables and gardening, a survey (see Appendix B) was distributed to students from each year level within the school prior to the implementation of the garden. This provided the evaluation team with a measure of the students' baseline knowledge, and will allow for an assessment of change in children's knowledge after implementation of the Nutrition Fund and the wider school approach.

The results of the baseline survey indicated that:

- Of those students surveyed, 71% (n=155) reported that at least one member of their extended whānau had a vegetable garden. On average there was one vegetable garden within respondents' extended whānau, with the gardens belonging most frequently to grandparents, Mum/Dad, and Aunty/Uncle (Figure 12). Just over one quarter of students did not have access to a vegetable garden within their extended family (n=62).

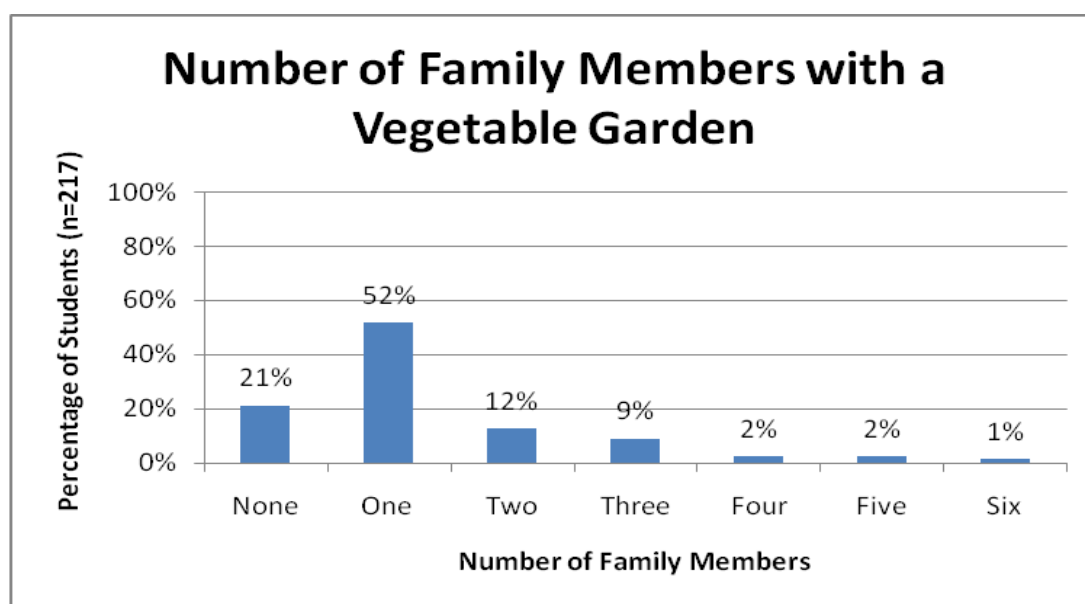


Figure 12: Number of family members with a vegetable garden- Primary School C

### Growing Plants

- Students had a reasonably good knowledge of the various elements needed for plant growth, however this knowledge appeared to vary as a function of age, with older students (aged 9-13 years) having a more comprehensive knowledge of these requirements than younger students (aged 4-9 years).
- 74% of students (n=160) could correctly identify the three listed elements (water, sunlight and soil), 12% (n=26) correctly identified two element, and a

further 12% (n=27) could identify just one element. 2% (n=4) were not able to correctly identify an element necessary for plant growth (Figure 13).

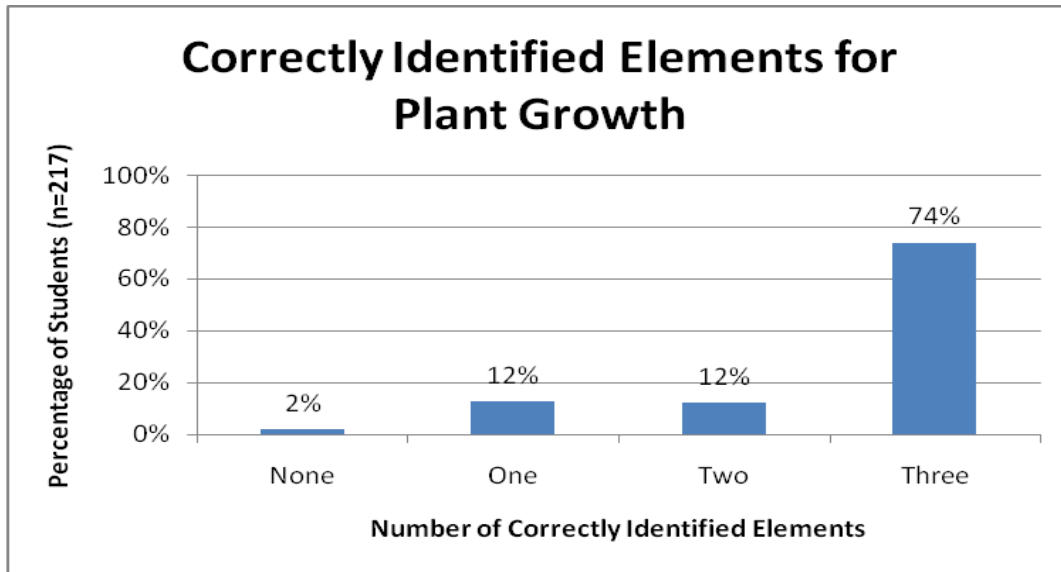


Figure 13: Number of correctly identified elements for plant growth- Primary School C

Knowledge of and Preferences for Vegetables

- Respondents were relatively uniform in their preference for preparation methods of vegetables. Most students reported that they preferred to eat vegetables in the form of salads, soups and sandwiches (55%, 53% and 53% respectively). This was followed by stir-fried vegetables, roast vegetables, boiled vegetables, raw vegetables, and vegetable quiche (Figure 14).

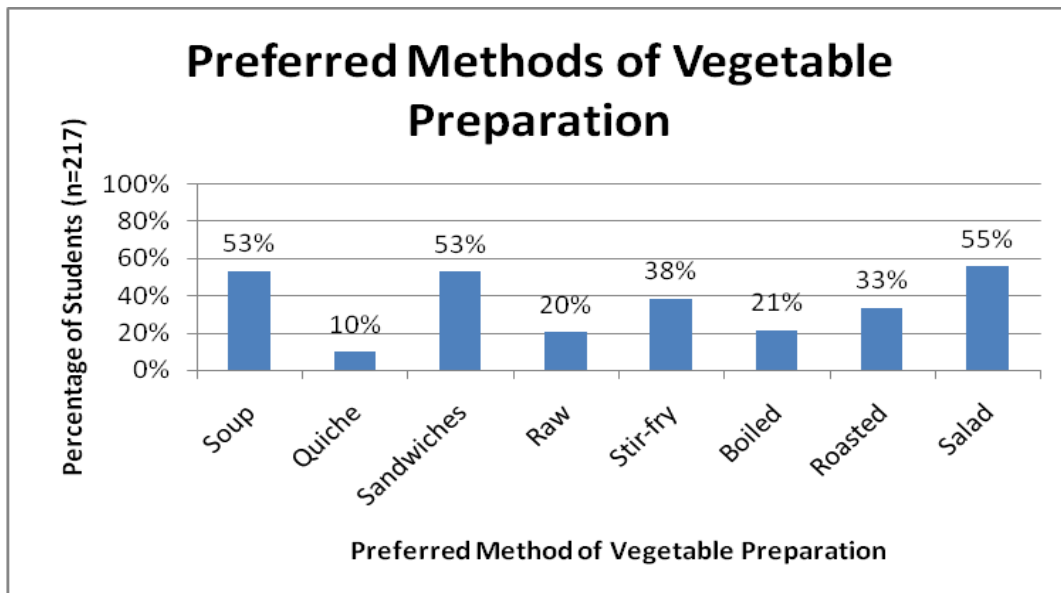


Figure 14: Preferred methods of vegetable preparation- Primary School C

- On average, students were able to correctly identify approximately 8 vegetables out of a list of 12 given pictures, although again this knowledge varied as a function of age, with older students more adept than those younger students.

- Over half of the students could identify a picture of the following vegetables: carrot (98%), tomato (97%), potato (92%), lettuce (83%), capsicum (80%) broccoli (78%), cauliflower (76%), celery (74%) and beans (58%).
- Less than half of the students were able to identify pictures of the following vegetables: spinach (24%), pak choy (16) and garlic (6%) (Figure 15).

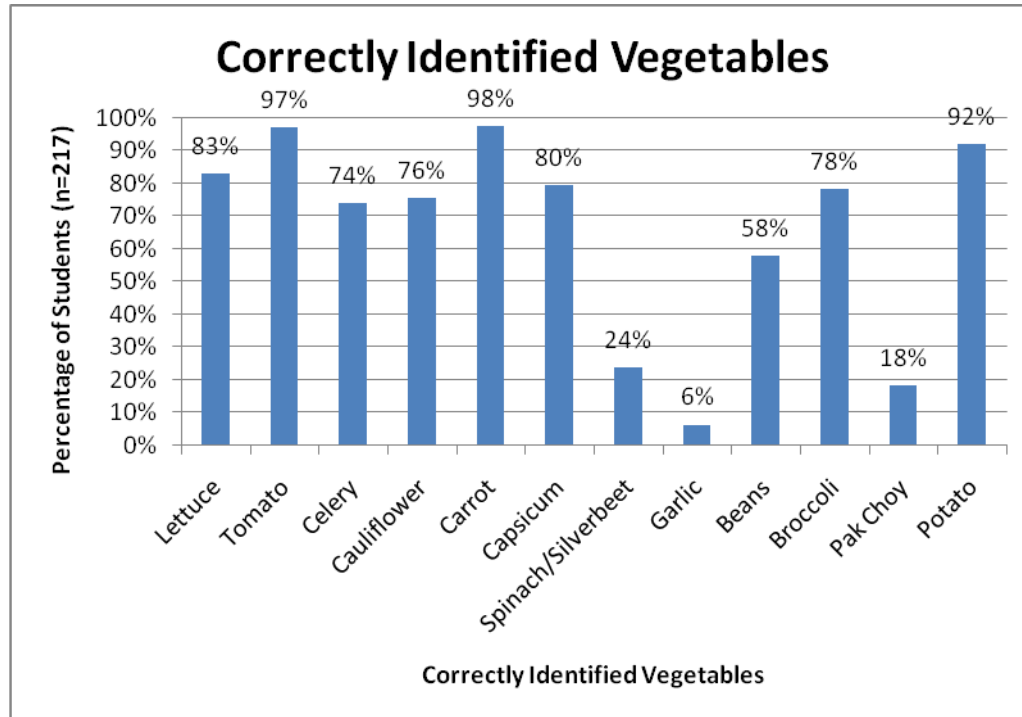


Figure 15: Number of correctly identified vegetables: Primary School C

### Knowledge of Main Food Groups

- Although students appeared to have a reasonable knowledge of the recommended number of servings of fruit and vegetables per day, they had more difficulty with the three other main food groups (Figure 16).
- Modal data is presented in Figure 16 as it illustrates that the majority of students underestimated the number of daily servings of each of the three other food groups that contribute to a healthy diet.
- 17% of students (n=37) indicated that the recommended daily quota of fish, chicken, eggs or meat alternatives was zero servings, while 31% (n=67) indicated the recommended daily quota was one serving.
- 18% of students (n=38) indicated that the recommended daily quota of milk, yoghurt, cheese and ice cream was zero servings, while 38% of students (n=82) indicated the recommended daily quota was one serving.
- 12% of students (n=27) indicated that the recommended daily quota of breads, cereals, rice and pasta was zero servings, while 28% of students (n=60) indicated the recommended daily quota was two servings.
- This suggests that although students have a good understanding of the “5+ fruit and vegetables a day” message, future student education may need to be targeted towards increasing students’ knowledge of the three other main food groups.

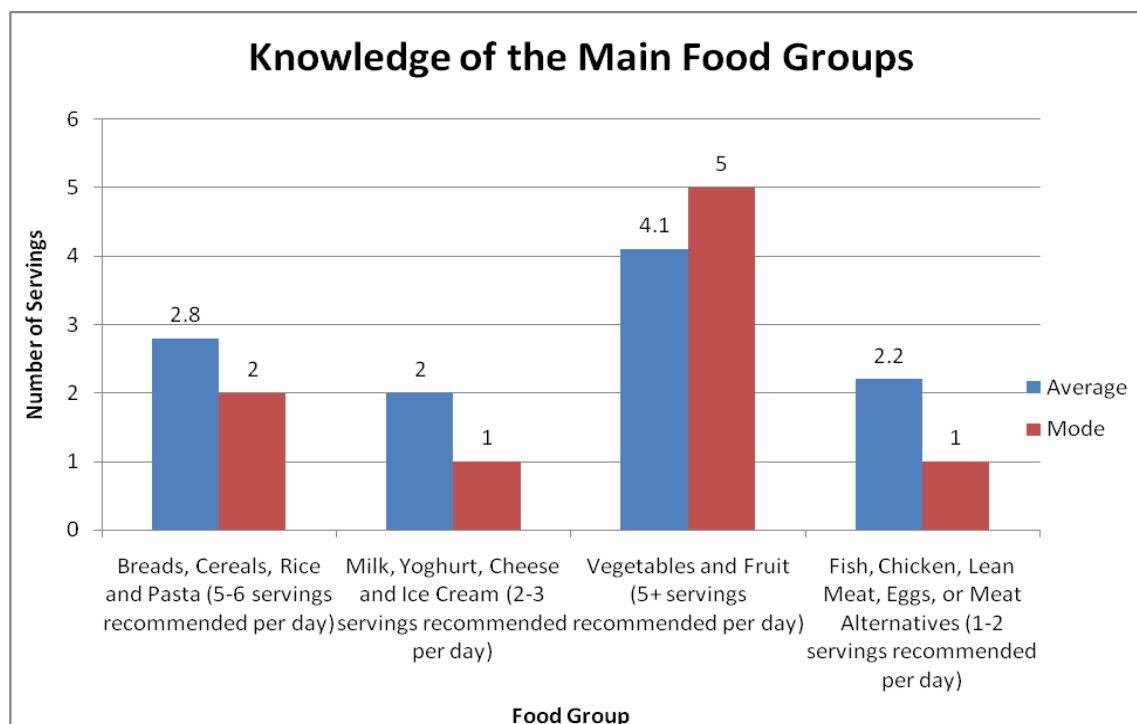


Figure 16: Knowledge of main food groups- Primary School C

### 3.3.7 Summary and Future Direction

The vegetable gardens which are to be developed using the Nutrition Fund grant are intended to support the schools overall vision for creating a school environment that promotes healthy lifestyle choices.

#### Summary of Key Findings

- Students at Primary School C had a reasonable knowledge of various different vegetables at baseline, as well as the elements needed for plant growth; this knowledge appeared to vary as a function of age, with older students having a more comprehensive knowledge of these concepts.
- Students were less knowledgeable about the number of recommended daily servings from each of the four main food groups, although they displayed greater awareness of the need for 5+ fruit and vegetables a day.
- Wide consultation has resulted in a high level of support from students and staff for the Nutrition Fund supported initiative.

#### Future Directions

- Given the early stage of the initiative, only baseline data was collected to inform this evaluation. A survey of parents and students at a later date should be used to identify the extent to which this learning has improved as a result of students' involvement with the, and the extent to which it has transferred to parents/whānau, and the wider community.
- The strong student leadership component of this initiative will also warrant evaluation at a later stage in the implementation of the initiative.

## 3.4 Intermediate School A

### 3.4.1 School Profile

<b>School Type</b>	Coeducational state intermediate school
<b>Roll</b>	256 pupils
<b>Decile</b>	One
<b>Ethnic Makeup</b>	14.5% Pasifika, 64.1% Māori, 15.2% NZ European, 6.2% other ethnicities
<b>Ethos / Culture</b>	The school has a commitment to ensuring the health and wellbeing of its students, as reflected its involvement with the Health Promoting Schools programme and the Healthy Heart Award programme.

### 3.4.2 Initiative: Upgrading the School's Water Fountains

Intermediate School A used the Nutrition Fund grant to upgrade the school's water fountains, with the intention of encouraging students to drink more water, more frequently throughout the school day.

Prior to receiving the Nutrition Fund grant, the school had replaced two fountains in 2007, however they did not have sufficient funding to replace the other fountains. Although the school had applied for \$14,300 in their original application to the Nutrition Fund for another concept, after discussion with the LBD Project Manager, their application was amended in favour of the student led project and they received an amount of \$7500. This grant covered the costs of replacing the remaining fountains, including the supply of the pedestal fountains, drinking taps, and a hose tap, and the associated installation costs.

### 3.4.3 Data Sources

The following data sources were used to inform the evaluation of this initiative:

#### Development of the Initiative

- Nutrition Fund application form;
- Student Council proposal;
- Student Council survey of students' drinking habits; and
- Comments and feedback from staff and the student project leader.

#### Implementation of the Initiative

- Comments and feedback from staff and the student project leader;
- Student Council proposal;
- Completed evaluation form.

#### Preliminary Outcomes

- Photographs of the previous and new water fountains;
- Teacher survey indexing impact of the water fountains; and
- Visual assessment of water fountains by the evaluation team.

### **3.4.4 Initiative Development**

This initiative developed out of a student council project; the student council noted that the school did not have enough working water fountains to cater for the whole school; in November of 2006, it was noted that only seven fountains on the school grounds were working. Of those that were in place, many had deteriorated considerably. Comments from teachers noted that some of the existing pedestal fountains were broken (e.g., mechanisms had been removed which are now obsolete or expensive to replace); some were not functioning properly which lead to hygiene concerns (e.g., the taps leaked causing students to place their mouths over tap to avoid spillage); and others were rusty, impacting negatively on the quality of the water they provided. An expert from Living Water surmised that the rust problem was due to the fact that the fountains were 15-20 years old and made of an amalgamation of three metals- galvanised iron, brass and copper. The expert noted in his report that electrolysis had corroded the galvanising and exposed the iron, with rust a recurring problem.

#### **3.4.4.1 Identifying the need for this initiative**

Some of the key issues that identified the need for the initiative included:

- A one-day survey conducted by the student council, in which students were asked whether they had had anything to drink throughout that day. The results of the survey indicated that 130 out of the 230 students surveyed (over 50%) reported having had nothing to drink at all that day, from the school fountains or otherwise.
- Students identified that they did not like drinking from the water fountains, because the water that came out was dirty and unpleasant tasting.
- The student council, upon learning the above, researched the health benefits of consuming the recommended 8 glasses of water per day. They found that among other things, regular consumption of water can lead to improved performance and concentration, enhanced clarity of skin and a reduction in lethargy.
- The student council also found that water is a much healthier alternative to other drinks containing sugar, which can lead to tooth decay and blood sugar fluctuations.

Accordingly, the council then took several steps, as outlined below:

- Presented the Board of Trustees with the issue, who could not fund the upgrade;
- Obtained water samples from the fountains;

- Met with two water companies and Frucor, to discuss fountain options as well as beverage and bottled water options;
- Visited three other schools to look at their school fountains and discuss these with each schools respective caretaker;
- Weighed the positives and negatives of the various fountain options;
- Requested a quotation for the total cost (fountains and installation) of the upgrade; and
- Prepared a proposal to submit to the Nutrition Fund.

### **3.4.5 Initiative Implementation**

The school, after careful consultation, decided upon the Living Water Concepts company to supply and install the fountains, citing the following reasons:

- The company came recommended, and has extensive experience in supplying schools after frequent jobs repairing sub-standard water fountains on school grounds;
- The fountains are vandal-proof;
- They are resistant to wear-and-tear; and
- They have features designed to comply with health and safety standards.

The Nutrition Fund grant was received in late 2007, and the fountains installed shortly thereafter.

### **3.4.6 Preliminary Outcomes**

This section explores the outcomes of the Nutrition Fund supported initiative using data provided by the school, as well as additional data collected to identify the perceptions and experiences of the teachers and students involved with the project. It is important to note that the project was developed and led by the student council in 2006/2007. As a consequence, the evaluation team was somewhat limited by the information that was made available to them; there was some loss of knowledge from students involved with the project who were no longer in attendance at the school, and current students and staff. A summary of the key findings in presented in Section 3.4.8.

As a result of the Nutrition Fund supported initiative:

- Intermediate School A is now able to supply clean, fresh drinking water to its students.
- Groups that have been affected by this initiative, as indicated by the Nutrition Fund Application Form include not only the students attending this school, but also children who attend Saturday morning Music School, and other visitors to the school.
- A site visit and inspection of the new fountains by a member of the evaluation team revealed that the fountains appear as-new some months post-installation, and provide water that is palatable.

- Teacher comments also indicated that the new positioning of the fountains nearer to classrooms has also improved classroom management as students do not need to walk as far to fill their water bottles.
- Results from a survey that was conducted by the student council with the teachers from Intermediate School A indicated that 70% of the students now use the drinking fountains. Teachers reported that whereas students had previously not been drinking enough fluids, there has been a significant increase in the number of students regularly drinking water at school since these fountains were upgraded.

### **3.4.7 Summary and Future Direction**

The upgrade of Intermediate School A's water fountains supports the schools overall vision for creating a school environment that promotes healthy lifestyle choices. The following is a summary of the key findings from the evaluation of this initiative:

#### Summary of Key Findings

- The students at Intermediate School A now have access to clean, fresh drinking water as a result of this student-led initiative.
- The fountains appear as-new some months post-installation, and provide water that is palatable.
- The fountains have been designed so that they are resistant to wear-and-tear and are vandal proof, which should ensure the sustainability of the initiative.
- Teachers report that there has been a significant increase in the number of students regularly drinking water at school since these fountains were upgraded.

#### Future Directions

- It is not clear from the information that was made available to the evaluation team how water consumption is promoted to students.
- Further evaluation at a later stage would be useful to identify the above, and the extent to which these messages have been taken up by students, parents/whānau and the wider community.

## 3.5 Senior School A

### 3.5.1 School Profile

<b>School Type</b>	Coeducational state secondary school
<b>Roll</b>	692 pupils
<b>Decile</b>	One
<b>Ethnic Makeup</b>	78% Pasifika, 14% Māori, 1% NZ European, 7% other ethnicities
<b>Ethos / Culture</b>	In the 2006 ERO report, it was noted that “the school places strong emphasis on ensuring that students receive a high standard of pastoral and health care so that they are able to progress their learning and achievement”.

### 3.5.2 Initiative: Establishing a Breakfast Club

Senior School A used the Nutrition Fund grant to establish a breakfast club, with the intention of encouraging students to eat a healthy breakfast before they leave home or first thing in the morning at school, either at the breakfast club, or from the school’s cafeteria. The breakfast club would provide participants with a balanced and nutritious breakfast, alongside structured physical activity and health education.

In their application for funding the school requested \$14,161.35, which was to cover the cost of five separate initiatives, each of which was designed to have a positive impact on the health and wellbeing of the students of Senior School A. However a significant component of this request was for physical activity and tutor salary costs, which were outside the Nutrition fund criteria and could not be supported. After discussion with the LBD Project Manager, their application was amended in favour of the student led breakfast club project, nutrition education and training for parents and students from a dietician (using a train-the-trainer model of delivery), and the establishment of an edible garden, for which they received an amount of \$5000.

### 3.5.3 Data Sources

The following data sources were used to inform the evaluation of this initiative:

#### Development of the Initiative

- Nutrition Fund application form; and
- Comments and feedback from the project leader and the Student Health Council.

#### Implementation of the Initiative

- Nutrition Fund application form; and

- Comments and feedback from the project leader and the Student Health Council.

#### Preliminary Outcomes

- Comments and feedback from the project leader and the Student Health Council; and
- Breakfast Club participation data.

### **3.5.4 Initiative Development**

#### **3.5.4.1 Identifying the need for this initiative**

The school identified the need for this specific initiative within its school community by conducting a survey. In this survey the students were asked simple questions which were designed to gauge, among other things: how many students were eating breakfast, what breakfast foods were being consumed and where, and whether there was sufficient interest to warrant the development of a breakfast club programme involving the provision of a nutritious breakfast, structured physical activity, and health education.

The results of the survey indicated that:

- A large proportion of the student body were not eating breakfast prior to arriving at school (Specific numbers are not reported as the survey data was not made available to the evaluation team)
- Reasons cited were running out of time to prepare breakfast and/or being too busy in the mornings;
- Most students purchased a pie and fizzy drink en route to school;
- Some of those students that ate breakfast at home reported having cereal, milk, fruit and toast for breakfast;
- Students would be prepared to spend up to \$2 for breakfast at school, but would enjoy it more so if it was free of charge;
- Students were prepared to come to school earlier to participate in a breakfast club, and this was identified as a means of supporting the students to get the best out of the school day.
- Students suggested Jump Jam, Les Mills Body Combat, KRUMPing and Hip Hop as activities that they would like to see happening during breakfast clubs.
- Students, for the most part, lacked knowledge and/or the interest in interpreting food labels.

In addition to this survey, the school identified appropriate operational facilities, whilst recognising and utilising the human resources that were already available within the school and the community. Students from Year 9 completing the Health Curriculum subjects were also involved in generating ideas for health-based initiatives for the school.

### **3.5.4.2 Consultation**

The Student Health Council was very involved in the initiative from the outset. Prior to the initiatives conception, they surveyed staff and students to ascertain what kinds of things they wanted to see being implemented in the school. This consultative process was designed to create interest, buy-in, enthusiasm, and expanded student skills and tools in relation to strategic planning and communication.

### **3.5.5 Initiative Implementation**

#### *Establishing a Breakfast Club*

The school received the grant at the beginning of 2008. To date, a portion of the funds have been used to purchase utensils, equipment and resources to support the ongoing running of a breakfast club. This included bowls, plates, tea towels, serving utensils, table cloths, storage containers, fruit baskets, toasters, cutlery and knives, glasses and electric jugs. The Sanitarium Food Company also agreed to supply the school with a year's supply of breakfast cereals. The costs of providing staff time for weekly training, meetings and support with the student health council, and the development of a sheltered student seating area between the cafeteria and the gymnasium have been covered by the school.

At the end of 2007 the breakfast club was still in the concept stage; however by the beginning of 2008 the Student Health Council was meeting regularly to progress the initiative further. The breakfast clubs were promoted in the school notices, and sports teams were also invited to attend. The clubs run from 6.50am until approximately 7.50am. The clubs originally ran on Tuesdays and Thursdays, however the Thursday club was discontinued after week seven due to insufficient attendance. A typical club session begins with students and staff getting active together, and then celebrating with healthy breakfast foods. There is an emphasis on social connection and fun as well as physical activity and nutrition. The breakfast clubs also serve as a vehicle for celebrating positive changes.

The initiative was supported by a number of different groups, both within and external to the school community. The Student Health Council held weekly meetings with project staff to ensure a smooth and coordinated roll out of the project. During these meetings various obstacles to the project were discussed, including procuring sufficient sponsorship, preparing the activities, and securing a venue, and corresponding solutions brainstormed. Sanitarium agreed to supply breakfast cereals for the year, and an appropriate instructor was sourced for the activities. The breakfast clubs are currently being run out of the school gymnasium. Southern Cross was also involved in guiding the students with the initiative, and the students commented that this input had been highly valuable.

#### *Nutrition Education Sessions*

The funding received was also designated to support nutrition education sessions for students and parents, using a “train-the-trainer” model to provide for the sustainability of the initiative. However, running these sessions within the stated timeframe did not prove to be feasible due to over-commitment of both students and other sources of support within the school. A nutritionist is scheduled to support selected students to deliver these sessions in the spring school holidays.

#### *Establishing an Edible Garden*

The school had also applied for funding to establish an edible garden to increase students’ awareness and skills with regards to garden planning, identifying differences between natural and artificial foods, and growing planting and identifying fruits and vegetables. However despite the enthusiasm of the students, as with the aforementioned initiative the establishment of a vegetable garden within the stated timeframe did not prove to be feasible due to over-commitment of both students and other sources of support within the school. As such, this initiative is still in the planning stages. More recently the school caretaker has expressed interest in supporting this initiative.

### **3.5.6 Preliminary Outcomes**

This section explores the outcomes of the Nutrition Fund supported initiative using data provided by the school, as well as additional data collected to identify the perceptions and experiences of the teachers and students involved with the project. Given that the nutrition education sessions and edible garden initiatives are still in the planning stages, outcomes are only reported for the breakfast club initiative. A summary of the key findings is presented in Section 3.5.8.

#### *Participation Data*

Figure 17 presents the participation data for the number of students attending breakfast clubs.

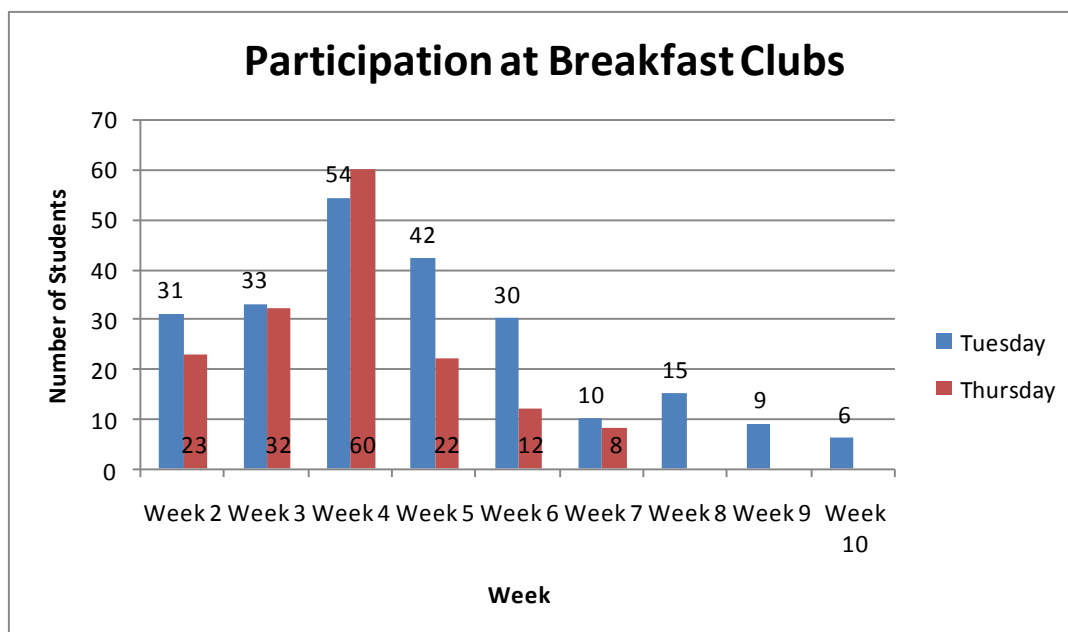


Figure 17: Participation data for breakfast club- Senior School A

As seen in Figure 17 there was some variation in student participation at the breakfast club over the ten week period evaluated; participation started out reasonably high, peaked in week four, and then slowly began to decline in the weeks that followed. Consultation with the project leader revealed that this drop in participation at breakfast clubs was largely a function of the onset of winter; at this time in the morning it is cold, dark and wet and the students were thus discouraged from coming along to the breakfast club. The student health council subsequently reviewed the delivery of the clubs, and decided to postpone the recommencement of the clubs until the onset of spring at the beginning of Term 3. Additional sponsorship has been secured, and the students are confident that there will be an equally positive response to the clubs as was seen in the first few weeks of implementation.

### Student Feedback

The students of the Student Health Council identified a number of benefits derived from participation in the breakfast clubs. These included:

- Increased energy levels and fitness;
- Improved concentration in class;
- Encouragement to step outside the students comfort zone in a safe environment;
- The social aspect of the clubs;
- The clubs have helped to forge and strengthen student-teacher and peer relationships;
- The clubs demonstrate to their community the schools commitment to being healthy; and
- Getting students used to rising early in the mornings was seen as a positive step in preparing them for employment, particularly for the Year 13's.

In addition, all students reported that running the club gives the students a good feeling, because they are helping not only themselves, but also the school and wider community.

The student health council identified that of all the knowledge and skills that are required in order to successfully run a breakfast club, the two crucial of these were a thorough knowledge of physical activity, and an ability to motivate participants to make a whole-lifestyle change. The students identified the following as outcomes they would like to see occurring in the near future as a direct result of the breakfast clubs:

- Having a ripple-like impact on the wider community;
- Seeing an increase in participation numbers;
- Having compulsory attendance at breakfast clubs, 5 days a week;
- Other schools using the model and applying it within their school community; and
- Having the breakfast club sustained over an extended period of time.

The students noted that in order to achieve the above, it would be important to involve the younger students during these early stages, so that when key people involved with the project leave the school the clubs are able to continue to function in their absence. Consequently, it was suggested that juniors (Year 9 & 10) should be involved in the health council, to ensure the sustainability of the clubs, long-term.

### **3.5.7 Summary and Future Direction**

The establishment of breakfast clubs within Senior School A was intended to support the schools overall vision for creating a school environment that promotes healthy lifestyle choices, and to demonstrate this vision to, and set a positive example for, the wider community.

#### *Summary of Key Findings*

- The students at Senior School A now have access to a forum in which they can kick-start their day by having a healthy breakfast.
- Students report feeling more energised and having improved concentration throughout the school day.
- The time of year impacts on attendance at breakfast clubs.
- The participation rates at the breakfast rates were initially high, which indicates that the clubs have the potential to be maintained over the long-term, provided the critical success factors are identified by way of an internal review, with feedback from participants. This process should echo the extensive consultation that was carried out with students prior to the implementation of the initiative as to what they would like to get out of the clubs.
- The students at the college identified a number of barriers to the successful implementation of the initiative, including: getting the students motivated;

finding adequate sponsorship; securing a venue, adequate facilities and adult support; and miscommunication.

- The students also identified a number of enablers to the successful implementation of the initiative. These included: having a good range of activities, being student-led; planning over time; and inviting parents/whānau and staff to get involved.
- The sustainability of the initiative is to be augmented by involving students and staff from all levels within the school in the running of the clubs, as well as through ongoing health education and promotion for students and whānau.
- Enthusiasm on behalf of the students needs to be balanced with realism as to what can be achieved within the given time frame and with the resources and support available within the school.

#### Future Directions

- Further evaluation at a later stage in the initiative will be beneficial to identify the sustainability of the initiative.
- The student council links regularly with other schools, and intends to share the success of the breakfast club at Senior School A with these schools, and encourage them to adopt similar programs.
- The school is looking at sourcing additional adult support to progress the edible garden and nutrition education initiatives.

## **4. Discussion and Recommendations**

This section presents an overview of the key findings identified in this evaluation, followed by a set of key recommendations based on these findings.

### **4.1 Summary of Key Findings**

The key findings of the present evaluation across the five schools are presented under four key headings as follows: Need for Nutrition Fund supported initiatives; Consultation and whanau engagement; Implementation; and Outcomes.

#### ***Need for Nutrition Fund supported initiatives***

The current evaluation highlighted the need that is within schools for Nutrition Fund supported initiatives such as those that have been profiled in this evaluation, as well as ongoing evaluation for students and parents. This was evident in:

- The lack of knowledge among students and parents regarding nutrition (e.g., lack of knowledge about vegetables and the main food groups, unhealthy lunch options suggested by students and parents)
- The data which suggested that students' consumption of healthy foods and water was inadequate (e.g., results from student-led breakfast and water surveys).
- Surveys with the students also suggested that while the 5+ fruit and vegetables per day message appears to be getting through to students, this knowledge does not appear to be reflected in some students food choices.
- When identifying the need for nutrition-related initiatives within schools, it is important to prioritise; some schools were overly ambitious in what they set out to achieve given the level of internal support that was available to support the development and implementation processes. Enthusiasm on behalf of the students needs to be balanced with realism as to what can be achieved within the given time frame and with the resources and support available within the school.
- It is also important to note that all of those schools considered in this evaluation are located in areas of high deprivation; given that cost is a big driver of food choice, this warrants further investigation as to how significant a factor the cost of food is in determining food choices (of both parents and students).

#### ***Consultation and whanau engagement***

The evaluation also highlighted the need for an extensive consultative process from the outset, with both students and parents/whanau, to support implementation of the initiatives.

- Students and staff alike appear to have embraced the various Nutrition Fund initiatives, with a demonstrably high level of ownership of the more successful projects among students and staff.
- The various initiatives appeared to have had relatively less success, however, in engaging with whānau, and securing their commitment to participate in the development and implementation process.
- Engagement of parent/whānau, while a challenge, is an important factor for success. Without this, the messages that students receive in relation to food and nutrition in the home and school settings are not consistent, and parents may feel harassed and disenfranchised
- The evaluation also highlighted the potential to consider extended family such as grandparents who were most likely to have vegetable gardens and may have more time to spend teaching children if retired.

### ***Implementation***

The evaluation highlighted several factors that enabled or supported the implementation of Nutrition Fund supported initiatives, and several factors that hindered implementation, as follows:

- Key enablers to the successful implementation of initiatives that were identified included:
  - Guidance and support from the DHB through Health Promoting Schools and public health nurses;
  - A high level of student involvement in the project;
  - Planning over time and setting goalposts;
  - Consultation with parents and whānau;
  - Gradual change;
  - Identifying choices or modes of implementation that suit students' tastes and lifestyles;
  - Support of the school principal and staff;
  - Drive, commitment and enthusiasm from all those involved in the project; and
  - A whole-school approach.
- Key barriers to the successful implementation of initiatives that were identified included:
  - Limited whānau engagement;
  - Financial constraints;
  - Difficulties in securing and financing adequate facilities/resources and supervisory support;
  - Unforeseen circumstances e.g. staff issues and delays in getting things set up; and
  - Competing (curricular) demands.

### ***Outcomes***

The evaluation highlighted the following key outcomes from the five Nutrition Fund supported initiatives selected for this evaluation. These initiatives have resulted in:

- Increased availability of healthy choices and water in schools

- A high level of student engagement, which in turn suggests an impact on student knowledge and attitudes (e.g., a school with 2 gardens already in place at the time of the evaluation had much higher baseline scores than a school with gardens yet to produce vegetables)
- Schools being able to further their vision for a healthy school environment that supports the notion of providing students with the greatest opportunity to learn
- Many schools linked the funding application process and identifying need for an initiative to student projects, and thus supported the development of other student skills (e.g., numeracy, literacy, leadership)
- Given the early stage of many of the initiatives presented in this report at the time of the evaluation, further evaluation at a later date will be required to document:
  - The extent to which the learnings of the project are taken on-board by students and retained over time;
  - The extent to which these learnings are shared with whānau; and
  - The extent to which these learnings affect attitudes and behaviours across settings.
- Further evaluation would also be useful to explore sustainability of initiatives as the current evaluation is slightly limited due to lack of outcome data available from some schools.

## 4.2 Recommendations

Based on the evaluation findings the following recommendations are made:

### *Nutrition Fund Initiatives*

- Provide schools with realistic guidelines for costing potential Nutrition Fund projects, perhaps in the form of exemplar initiatives with accompanying budgets to increase accessibility to funding for schools.
- Continue to encourage and prioritise student-driven projects with a high level of student, staff and, importantly, whānau engagement, and with links to external agencies from the outset.
- Fund initiatives that seek to engage whanau, including trialling projects that seek to engage extended whanau such as grandparents, as the current evaluation suggests that this is an ongoing challenge and one that would benefit from DHB.
- Open up the channels of communication and foster relationships between schools that are developing or implementing Nutrition Fund initiatives, to identify models that work (e.g., breakfast clubs and changes to school lunch menus), and further, to ensure that the expertise that is housed within these schools is shared with other potential Nutrition Fund schools in the community perhaps through Nutrition Fund Newsletters.

### *Evaluation*

This evaluation highlighted that schools often have limited capacity to conduct evaluation; as such there is a need to build the capacity of schools for internal review through measures that are easy to implement and take little time. In the present

evaluation resources were developed by the evaluation team, however these were still not completed by all schools so the development of the evaluation tools should continue in collaboration with schools. In addition, it is recommended that:

- Grant applicants are provided with clear guidance on what is expected in terms of evaluation. This is an additional burden for schools and clearer guidance or example evaluation tools will help schools provide data that is better suited to identifying the impact of the Nutrition Fund on its intended objectives.
- Schools are supported to use evaluation findings in such a way that allows for the continuous development of these projects.
- The schools who participated in this evaluation also need to be supported to complete the follow-up outcome data collection to provide further outcome data on the impact of the Nutrition Fund.  
More in-depth qualitative data collection to identify learnings to share with other schools would also support the successful implementation of initiatives supported by the Nutrition Fund.

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