Griffith UNIVERSITY
Social Marketing @ Griffith

EVALUATION OF HEALTHY EATS (2021)

LifeEd. Queensland

Evaluation of Healthy Eats (2022):
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EXECUTIVE SUMMARY

Life Education Queensland (LEQ) is the largest non-government provider of health and wellbeing education to primary school children. In 2021, the organisation supported more than 180,000 Queensland children, working in partnership with almost 800 schools and pre-schools.

The Healthy Eats Program, developed and delivered by LEQ, aims to empower students to make healthier food choices by developing and sustaining a whole school approach. This evaluation of 19 participating schools was undertaken to assess the extent to which the program has:

a) Improved the healthy eating environment and culture at each school to provide children with greater access to healthier food options at school
b) Increased children's knowledge of the importance of healthy food choices
c) Increased children's consumption of vegetables and fruit at school

Self-report data collected by Life Education Queensland from schools and students who participated in the Healthy Eats program was used. The data analysed included:

- a process evaluation examining the degree to which schools have implemented initiatives to increase children's access to fruit and vegetables, as well as improvements to the school's overall healthy eating culture and engagement with parents
- an outcome evaluation of pre-post student knowledge and intention measured through surveys from 19 schools (1868 total responses (pre-intervention (n = 933); post-intervention (n = 935))
- an outcome evaluation of pre-post individual behavioural data from eight schools entered as part of the four-week Passport Competition that measured fruit and vegetable consumption at school

A summary of key outcomes from the 19 schools is as follows:

a) Implementation of Healthy Eats within schools

- Increased the number of schools with an active healthy food and drink policy from 1 school pre intervention (5%), to 9 schools post intervention (45%).
- Increased the number of schools with a functioning vegetable garden from 11 schools pre-intervention (58%) to 17 schools post intervention (89%)
- Increased the number of schools that conduct in-class fruit and vegetable breaks from 10 school pre-intervention (53%) to 18 school post intervention (95%)
- Increased the number of schools that have a student leadership team to promote healthy eating among their peers from 0 schools pre intervention (0%) to 12 schools post intervention (63%)
- Increased the number of smart choice compliant tuck-shops from 2 schools pre-intervention (11%) to 6 schools post intervention (32%), with an additional four schools improving their tuck-shop menus without achieving smart choice compliance.
- Decreased the number of breakfast programs being provided by schools from 11 pre intervention (58%) to 10 post intervention (53%). Schools identified COVID as having a significant impact on their breakfast programs since 2020.
- Delivered nutrition professional development to 157 classroom teachers from ten schools

In summary, participation in the Healthy Eats program had a substantial positive effect on the healthy eating environment in some schools, which was observed particularly in those schools that pursued Healthy Eats accreditation. The increase in vegetable gardens, fruit and vegetable breaks and improvements to tuck-shop menus in some schools that participated in Healthy Eats means that students in those schools have improved access to

healthier food options and greater opportunity to eat healthy food than would have been the case before their involvement with the Healthy Eats program. Other initiatives delivered via the program, such as providing nutrition information to parents and delivering nutrition professional development to teachers, were also important activities implemented to encourage parents and teachers to model positive healthy eating behaviours.

The findings also suggest that regular exposure to Life Education programs has a beneficial effect on knowledge. Students who had previously attended a Life Education session had more accurate knowledge of the recommended daily number of serves of vegetables prior to participation in the Healthy Eats program. These differences were no longer evident following the program and were not present for fruit knowledge before or after the program. However, it is an indication of the benefit of regular exposure to classroom nutrition education. Findings suggest that students who attend schools with a vegetable garden have more accurate knowledge of the recommended daily number of vegetables than those students at schools without a vegetable garden. No differences were detected for knowledge of fruit serves. These results indicate that school gardens are of benefit to students and therefore, are an important program component of Healthy Eats.

b) Knowledge Outcomes

- Across all schools, knowledge of the daily recommended serves of fruit and vegetables improved significantly following participation in the Healthy Eats Program.
- Knowledge of recommended fruit serves changed from an average of **2.92 serves a day** pre-intervention to an average of **2.13 serves a day** post-participation, in closer alignment with Australian guidelines of 2 serves per day. More than two-thirds of schools (i.e., 68.4%) achieved the goal—students were able to accurately report the recommended serves of fruit. Prior to the intervention, no schools achieved this.
- Knowledge of recommended vegetables serves improved from an average of **3.55 serves a day** to an average of **4.81 serves per day**, closer to Australian recommended guidelines of 5 serves per day. In almost half of the schools (i.e., 47.4%) students were able to accurately report the recommended number of vegetable serves post-program. Prior to the intervention, no schools achieved this.
- The findings also showed that the variances in knowledge among students that were apparent prior to the intervention (e.g., female knowledge scores higher than male scores; non-ATSI student knowledge scores higher than ATSI student knowledge scores) were corrected in the post survey. This indicates that the program was successful in increasing knowledge of the correct serves of fruit and vegetables among ATSI students and boys to the same level as other students.
- The greater number of healthy lunchbox snacks being identified post-participation contribute further data indicating the positive learning effects of the intervention.

In summary, the findings support the positive effect of the Healthy Eats program on student healthy eating knowledge. The learnings were translated into positive behaviour change in some cases.

c) Behavioural Outcomes

- A four week interclass competition was conducted at all participating schools to encourage students to consume recommended fruit and vegetable intake levels at school, e.g., eating fruit and vegetables rather than energy dense processed food snacks. Data was collected at a matched individual level from students from eight schools, which supported a robust analysis.
- Desired outcomes were achieved for fruit consumption with increases in fruit consumption observed for children previously not eating recommended daily levels, decreases in amounts eaten reported by many children who were eating above recommended rates and importantly no changes observed for children who were eating daily recommended rates of 2 serves per day.
- Desired outcomes were achieved for vegetable consumption with a measurable increase in vegetable consumption observed and significant increases in consumption demonstrated in two of the eight schools.

In summary, the intervention was more effective at aligning fruit consumption closer to recommended daily consumption levels. It should be noted that increasing children's consumption of vegetables is the most important goal of the program, recognising that less than 6% of Queensland students consume the recommended serves each day. While some positive effects were observed for vegetable consumption and significant enhancement of knowledge relating to vegetable intake occurred continued effort will be needed to understand how to further align vegetable consumption closer to recommended daily intake rates.

We recommend streamlining the recording of data where possible to improve data quality—using pre-determined scales, and where possible, transitioning to electronic data capture to increase data accuracy while simultaneously reducing the burden of effort for teachers, students, and LEQ program coordinators.

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INTRODUCTION

This report is to describe the findings from an evaluation of the Healthy Eats Program, which is delivered by Life Education Queensland (LEQ). This introduction describes the development and evolution of the Healthy Eats program and concludes with a description of the enhanced 2021 program, and the recommended implementation approach for this program.

Development of the Healthy Eats Program

LEQ was the recipient of a grant in 2018 from the North Queensland Primary Health Network, *Active Healthy North Queensland Grant Program. The* purpose of the grant was to fund the development of a community-wide social marketing program to increase fruit and vegetable consumption among school-aged children, recognising the impact of overweight and obesity on the health of North Queenslanders. More than 37 per cent of North Queensland adults are obese, 10 per cent higher than the national average of about 27 per cent.

In response, LEQ researched, developed, piloted and delivered the Healthy Eats program, aimed at a whole of school approach that was underpinned by socioecological models of behaviour.

Healthy Eats Formative Research and Design Phase (2018)

This included:

- literature review
- surveying parents and carers in North Queensland
- observations of food environment
- stakeholder consultations in Cairns, Mackay and Townsville regions
- co-design sessions with key community stakeholders in all three regions
- development of program resources

A total of 73 community organisations and members were consulted which comprised of i) various community organisations: such as migrant and refugee centres, neighbourhood centres, community health centres, city councils, PCYC, industry bodies and community networks; and ii) community members: such as food suppliers, local dieticians, and LEQ educators who work in each of the three targeted regions of North Queensland.

As a result of their community engagement, LEQ determined that a socio-ecological approach was needed. The socioecological model (SEM) suggests individual health outcomes are connected to interactions with the interpersonal, organizational, community, societal and policy/enabling environmental factors.

Life Education's existing approach is focused on empowering children to make safer and healthier choices via the delivery of health and wellbeing education programs, largely face to face to pre-school and primary school students, supported by teacher and parent resources. By adopting a socio-ecological approach, the Healthy Eats program takes a whole of school approach to empowering students to make healthier food choices. With less than 5% of Queensland children meeting the Australian dietary guidelines for recommended serves of fruit and vegetables, Healthy Eats is an important investment in the health and wellbeing of children.

Healthy Eats Pilot Phase (2019)

LEQ held consultations (face to face, phone and email) with 41 state schools across Mackay, Townsville and Cairns (with whom LEQ had existing relationships). Of the 41 schools, 20 agreed to participate in the Healthy Eats pilot in 2019. These schools were identified based on level of need, and to ensure diversity in the overall sample including:

- Cultural diversity
- Aboriginal and Torres Strait Islander Community
- Small to medium size schools
- Large schools
- Outer metropolitan
- Regional
- Rural

The implementation of the pilot program involved the elements shown in the following table.

PROGRAM COMPONENT		INTENDED IMPACT
TARGETING THE STUDENTS (INDIVIDUAL)		
Healthy Eats Classroom Nutrition Module	60 min session practical nutrition workshop delivered to grade 5 by a Life Education Queensland Educator. Outcomes focused on connecting the dots between healthy eating and the benefits to health and wellbeing, as well as incorporating a hands-on skills-based component where students participated in preparing and consuming a healthy snack. This enabled them to apply the learning in a fun and practical way.	• Increase in knowledge and awareness of why it is important to eat healthy • Increase skills in choosing and preparing a healthy snack • Increase knowledge and awareness of the daily recommended serves of fruit and veggies
Classroom Fruit and Veg Passport Competition	The **Fruit and veg classroom passport challenge** incentivised students to record the number of serves of fruit and veg consumed during school food breaks each day over a four-week period on their own fruit and vegetable passport. Each grade 4-6 class combined their results to compete against the other classes in their school. The winning class of each school over the 4-week period was rewarded with a Healthy Eats classroom picnic.	• Creating a positive healthy eating environment amongst peers • Practicing strategies to boost fruit and vegetable consumption • Providing an opportunity to try new fruits and vegetables in a positive classroom environment
Healthy Eats Behaviour Change Pledge	Classroom activity engaging students to set their own healthy food goals	• Empowers students with sustainable strategies to boost their fruit and vegetable consumption • Provides practical goal setting skills in a positive environment amongst peers.

TARGETING FAMILIES, FRIENDS, PEERS AND SOCIAL NETWORKS (INTERPERSONAL)		
Healthy Eats School Newsletter Tips and Social Media Posts	Short healthy eating 'Tip of the week' articles for school community newsletters and social media pages targeted; families, carers, school staff and other members of the local school community	• Increase in knowledge and awareness of strategies and importance of and healthy eating behaviours • Increase consumption of fruit and vegetables at home and school
Parent information sheets	One page take home tip sheet/ information brochure to increase engagement with parents and carers surround importance of healthy eating behaviours and strategies to implement them	• Empowers parents to implement healthy food behaviours at home • Increase consumption of fruit and vegetables at home
Parent recipe competition	An online recipe competition for parents: simple, cheap, healthy recipes	• Creating an online recipe resource for school parents to share simple, sustainable strategies to implement healthy eating behaviours at home
Healthy Eats School Posters	Healthy Eats school promotional materials	• Creating a shared learning environment with positive reinforcement of healthy eating behaviours, changing the status quo. • Visual reminders of recommended daily fruit and veg intake and positive implications of healthy eating behaviours
TARGETING THE SCHOOL AND WIDER SCHOOL COMMUNITY (ORGANISATIONAL AND COMMUNITY)		
School Tuckshop Menu audit (QAST) and Healthy Eats tuckshop resources	School Tuckshop menu audit and recommendations. Healthy Eats School Tuckshop resources – recipes, meal deal posters, staff training.	• Increase in a whole school healthy eating environment • Increase in promotion of green (everyday) foods within the school environment • Decrease in the percentage of red and amber foods promoted within the school environment • Motivate tuckshops to prioritise a healthy food and drink service
Brain Food Break resources (classroom fruit and veg break)	Resources and tips to support schools in implementing or improving their fruit and veg classroom breaks	• Creates a consistent healthy eating behaviour each day at school in a positive eating environment with peers and role models (teachers)
School Breakfast program resources	Resources and tips to support schools in implementing or improving their School Breakfast Program	• Creates a consistent healthy eating behaviour each day at school in a positive eating environment with peers and role models (teachers)

School fruit and vegetable garden assistance and resources	Provide assistance (through our community partner Bunnings) for schools to setup or manage their own fruit and vegetable garden. Resources to help support schools in maintaining/ imbedding the school food garden as a key part of the school routine	• Consistent visual reminder of where healthy wholefoods (fruits and vegetables) come from. • Medium to facilitate practical skills, knowledge and awareness of planting, picking, eating and composting healthy wholefoods (fruits and vegetables) • Availability of fruit and vegetables to supply school tuckshop, classroom fruit and veg breaks, school breakfast programs, school markets, students without access to fruit and veg.
Curriculum aligned nutrition lesson plans	Ready to use nutrition lesson plans and resources for grade 4-6 students	• Supporting teachers to deliver nutritional education which is curriculum aligned and reinforces Australian dietary guidelines in a fun and interactive way • Contributes to changing the status quo of food behaviours at school
Healthy Eats Website and online resources	A FREE online platform for schools and parents to engage in a wide variety of resources that facilitate healthy food behaviours	• Increasing awareness and implementation of healthy eating behaviours at home and school
Collaboration with other key community organisations	Collaboration across different sectors to increase access and support for healthy school food environments	• Community organisation partnerships; working together to support school communities to develop and/or maintain healthy eating environments • Eg. Bunnings, QAST, Deadly Choices

Evaluation of Pilot (2019/20)

An initial evaluation of the pilot program observed the following:

a) 16 schools implemented school vegetable gardens, compared to 11 prior to the HE program (45% increase)
b) 15 schools engaged with parents to provide nutrition information and support via school newsletter and/or social media, compared to only 2 schools prior to the HE program
c) The number of schools offering breakfast programs for children increased from 8 to 12, an increase of 50%.
d) Prior to Healthy Eats, none of the 18 school tuckshops met the Smart Choices minimum standard. As a result of the HE program, four school tuckshops had made changes to their menu to become compliant, with three of those achieving the highest possible rating
e) A further five tuck-shops had made positive changes to their menu as a result of the Healthy Eats program Eight tuck-shops were unchanged, with only one of the 18 school tuck-shops showing an overall decline in healthy options
f) Increase in understanding among students of the recommended serves of fruit (2 serves per day) from 26.99% of students in the pre survey to 90.93% in the immediate post survey. 10 weeks following the intervention, a follow up survey showed that 67.19% of students were still able to recall the correct serving

g) Increase in understanding of recommended serves of vegetables (5 serves per day) from 34.91% in the pre survey to 93.15% in the immediate post survey. 10 weeks after the intervention, 69.72% of students were still able to recall the correct serving
h) Overall, following the Healthy Eats session, more than 90% of students correctly identified the recommended serves of fruit and vegetables, and more than two-thirds of students were able to retain this knowledge ten weeks later. This compares favourably with results observed from a separate cohort of students participating in Life Education's All Systems Go module over the same period. Those students increased their understanding of recommended serves of fruit from 32.09% to 76.35%, and vegetables from 26.94% to 78.79%. This suggests that the Healthy Eats nutrition session was more effective in increasing student knowledge of the dietary guidelines than the All Systems Go session

Healthy Eats 2021 – Improved and Enhanced Program

Following the evaluation of the pilot program, the Healthy Eats program initiatives and resources were reviewed to reflect feedback and recommendations from pilot schools to strengthen the impact and value of the program in 2021. Based on feedback and recommendations, further program enhancements were made, including:

- Creating an accreditation program where schools are incentivised to implement and maintain key healthy eating initiatives to be a Healthy Eats accredited school. The addition of the accreditation program led to the creation of 3 program pathways to better suit individual school priorities and needs
- Developing a professional development module for teaching staff to increase engagement with the program across the whole school, provide teachers with the knowledge and confidence to implement the program and to highlight the importance for teaching staff to model desired behaviours in the school setting
- Placing a greater focus on supporting schools to implement a whole-school healthy food and drink policy
- Adding a student leadership initiative to empower students to develop and implement activities to promote vegetables and fruits within their school
- Added communications strategies including the Healthy Eats Grapevine, a newsletter delivered once per term, to enable sharing of learnings and showcasing successes between participating schools
- Additional parent engagement strategies including a healthy lunchbox workshop and a variety of practical lunchbox handouts and resources
- Addition of an in-Community Development officer to facilitate the program and provide local, community level, face to face support to schools regularly, throughout the entirety of the program, ensuring schools have one contact, strengthening relationships between the school and Life Education Queensland

The revised program targeted three Hospital and Health Service regions in North Queensland (Mackay, Townsville, and Cairns) and three Local Government Areas in Southeast Queensland (Logan, Ipswich and Gold Coast, specifically Northern Gold Coast). This means 2021 was the first year that Healthy Eats was offered to Southeast Queensland schools.

Schools included in the program met the following characteristics:

- ICSEA under 1030
- Student enrolments of over 100
- Returning schools who participated in the pilot program, with student enrolments less than 100 or ICSEA over 1030
- Range of geographical regions from major cities, regional and rural settings
- Have an existing relationship with Life Education Queensland, that is, booked the Primary Health & Drug Program in 2021

Healthy Eats Objectives

The key objectives of the Healthy Eats program were to:

a) Improve the healthy eating environment and culture at each school, including children having greater access to healthier food options at school
b) Increase children's knowledge of the importance of healthy food choices
c) Impact children's intention to eat healthier
d) Increase children's consumption of vegetables and fruit at school

To achieve these, the Healthy Eats program worked with 19 primary schools via a whole school approach. Life Education Queensland adopted the socioecological model, extending our health education to include and influence the broader school community. This included:

- A place-based response that is tailored to the needs of each school community
- A dedicated in Community Development Officer to support schools to keep momentum, facilitate partnerships and implement program initiatives throughout the school year
- Delivery of a nutrition focused education session to 1035 upper primary school students
- Supplying print and online resources to school communities, including teachers and parents/carers, as well as providing incentives to engage children in eating more fruit and vegetables
- Supporting school to implement changes to their food environment, including implementing a school food and drink policy, adopting healthier menu items in school tuckshops, consistent fruit and vegetables breaks during class times for all classes, school vegetables gardens and more
- Facilitation of partnerships between schools and external organisations to support sustained changes to school food environments

Healthy Eats Program Pathways

Three Healthy Eats program pathways were developed as each school was at a different stage in their nutrition journey and Life Education Queensland did not want the 10-criteria accreditation pathway to be a barrier to schools that were not as advanced in their journey or did not feel adequately resourced internally to commit to the accreditation pathway. The three pathways are:

- A core pathway consisting of 4 minimum initiatives schools must commit to implementing. The core pathway consists of at least one initiative targeting each of the individual, interpersonal and organisational/community levels
- An accreditation pathway consisting of 10 initiatives representing a 'gold-standard' Healthy Eats school. Healthy Eats Accreditation is proposed to increase the likelihood of schools successfully implementing a range of initiatives. The initiatives cover a range of individual, interpersonal and organisation/community levels and are those that are likely to have a sustainable impact
- A sustainability pathway for schools who have achieved Healthy Eats Accreditation and wish to remain accredited

Core Pathway

Schools who book the Healthy Eats program commit to implementing the 4 core program initiatives:

1. A Healthy Eats classroom session for each Year 5 class, delivered by a Healthy Eats educator
2. All year 5 classes to take part in a four-week intra-school passport competition to encourage vegetable and fruit consumption

3. Undertaking a tuckshop menu health check twice per year as part of a Queensland Association of School Tuckshop (QAST) membership, paid for by Life Education Queensland.
4. Distribute provided parent/carer resources each term, including social media posts, school newsletter articles and classroom session information flyers

In addition to this, schools utilise the Healthy Eats School Toolkit containing guides and workbooks tailored to tuckshops, leadership groups and individual classroom teachers, that effectively assist in scaffolding goal setting by stepping through a process beginning with reflecting on the current food environment to identify strengths and weaknesses, to then use this information to set additional program initiatives and goals most relevant to their individual priorities and needs in supporting their students to make healthier food and drink choices.

Schools are incentivised to implement the core program initiatives by unlocking Healthy Eats rewards such as a Healthy Class Picnic for completing the Fruit and Veg Passport Competition and an annual membership to QAST for completing a menu health check.

Schools who choose to only take the core pathway are further encouraged and incentivised to implement at least one additional program initiative. Schools who do so are provided with a voucher to further support healthy eating within their school.

Accreditation Pathway

Schools who choose to become accredited work towards implementing the following criteria:

1. The school has a healthy food and drink policy
2. A Healthy Eats student leadership group is established who run activities in the school to promote vegetable and fruit consumption
3. All classroom teachers have attended a Healthy Eats in-services professional development session
4. The school tuckshop is Smart Choices compliant and the school provides food and drink consistent with Smart Choices at school organised events
5. The school has a well-maintained vegetable garden
6. All classes provide a daily Brain Break (vegetable and fruit break) for students
7. All classes display an Australian Guide to Healthy Eating and Frankie Fresh poster
8. A Healthy Eats session is delivered annually by Life Education to all year 5 classes
9. All year 5 classes participate in the Healthy Eats Passport Competition
10. The school provides healthy eating information to families through a variety of mediums including newsletters, social media, information sessions etc.

Schools are incentivised to work towards accreditation with a range of accreditation rewards and recognition including a one-off grant, once accredited, to be used to further support heathy eating within their school, use of an official accreditation badge, the school profile on Life Education Queensland's website and social media channels, and an official school presentation delivered by Life Education Queensland staff to acknowledge this commitment and achievement.

Sustainability Pathway

Schools who maintain their accreditation status each year are eligible and encouraged to join the Healthy Eats sustainability pathway. Schools are supported to develop an action plan to maintain the 10 accreditation criteria and set additional goals to improve the school food environment. Schools receive remote support and termly check-ins by a Healthy Eats Community Development Officer, as well as access to Healthy Eats resources such as the Life Education Hub, Healthy Eats newsletters and parent information including tip sheets, online workshops, resources and competitions.

Schools are incentivised to maintain their accreditation status in the sustainability pathway to continue to receive access to Healthy Eats program resources and support and to be able to continue to showcase the official Healthy Eats Accreditation badge. Schools who achieved accreditation in 2021 will be the first to enter the sustainability pathway in 2022. The three program pathways are summarised in the table below.

PATHWAY	CORE	ACCREDITATION	SUSTAINABILITY
ELIGIBLE	New schools + eligibility criteria	New and returning + eligibility criteria	Accredited Schools + eligibility criteria
COMPONENTS	Complete school, classroom & tuckshop checklists and set goals	Develop accreditation action plan	Pre-survey & school action plan
	Classroom module	Classroom module	Term 4 report & post survey
	Passport competition	Passport competition	Smart choices compliant tuckshop & school events
	Parent engagement	Parent engagement	Nutrition lessons delivered by school
	QAST membership & menu health checks	QAST membership & menu health checks/Smart Choices compliant tuckshop & school events	Passport competition
	+ at least 1 other accreditation initiative	Student leadership team	Parent engagement
		Teacher professional development	Food and drink policy
		Brain breaks in all classes	Student leadership team
		Healthy eating posters displayed	Teacher professional development
		Well maintained vegetable garden	Brain breaks in all classes
		Food and drink policy	Healthy eating posters displayed
			Well maintained vegetable garden
REWARDS	QAST membership	QAST membership	Healthy Eats newsletter
	Healthy Eats picnic	Healthy Eats picnic	Life Education Hub Healthy Eats content
	Healthy Eats newsletter	Healthy Eats newsletter	Healthy Eats accreditation badge
	Life Education Hub Healthy Eats content	Life Education Hub Healthy Eats content	Website recognition
	Half-way reward	Half-way reward	School profile on website
		Up to $1,000 grant	Passport competition collateral
		Website recognition	Remote support and phone check-in / term
		Official accreditation presentation	
		School profile on website	
		Press release to local media	
		Student leadership team badges	
		Health Eats accreditation badge	

Healthy Eats Program Components and the Socio Ecological Model

The socioecological model (SEM) considers individual health behaviour to be influenced be individual factors, as well as factors at the interpersonal, organizational, community, societal and policy/enabling environmental levels. In the following table, the Healthy Eats program is mapped onto the levels of the socioecological model.

Pathway	Program Component		Impact
TARGETING THE STUDENTS (INDIVIDUAL)			
Core & Accreditation	Healthy Eats Classroom Nutrition Module	60-minute practical nutrition session delivered to year 5 classes by the Heathy Eats Community Development Officer. Outcomes focus on connecting the dots between healthy eating, feeling great and performing at your best. Includes preparing healthy snacks, food safety and hygiene, and trying new foods in a fun and positive environment with peers.	Increase in knowledge and awareness of why it is important to eat healthy Increase knowledge and awareness of the daily recommended serves of fruit and veg Increase in skills in choosing and preparing a healthy snack
Core & Accreditation	Classroom fruit and veg passport competition	The fruit and veg classroom passport competition incentivises students to record the number of serves of fruit and veg consumed during school food breaks each day over a four-week period on their own fruit and vegetable passport. Classes combine their results to compete against the other classes in their school. The winning class of each school is rewarded with a Healthy Eats classroom picnic.	Creating a positive healthy eating environment amongst peers Practicing strategies to boost fruit and vegetable consumption Providing an opportunity to try new fruits and vegetables in a positive classroom environment
TARGETING FAMILIES, FRIENDS, PEERS AND SOCIAL NETWORKS (INTERPERSONAL)			
Core & Accreditation	Information to families	Short healthy eating tips and ideas for school newsletters and social media pages, recipes and handouts on the Life Education Hub, take-home information sheets about the program to increase parent/carer engagement	Increase in knowledge and awareness of strategies and importance of and healthy eating behaviours Increase in fruit and veg consumption at home and school Empowers parents to implement healthy food behaviours at home
Accreditation	Healthy eating posters	Healthy Eats school promotional posters and Australian Guide to Heathy Eating posters	Visual reminders of recommended daily fruit and veg intake and positive implications of heathy eating behaviours Creating a shared learning environment with positive reinforcement of healthy eating behaviours, changing the status quo

Accreditation	Healthy Eats Student Leadership Team	Student leaders who develop and implement initiatives to promote fruit and veg consumption to their peers	Increasing student engagement in the Healthy Eats program Creating a positive social norm around healthy eating attitudes and behaviours using peer to peer role modelling
	Parent lunchbox competition	An online 'lunchbox lifesavers' competition for parents/carers to share tips, recipes or ideas	Creating a forum for school parents to share simple, sustainable ideas and tips for healthy lunchboxes
TARGETING THE SCHOOL AND WIDER SCHOOL COMMUNITY (ORGANISATIONAL, AND COMMUNITY)			
Core & Accreditation	Healthy Eats tuckshop resources and QAST membership for tuckshops	School tuckshop menu health check and recommendations Healthy Eats school tuckshop resources – recipes, meal deal posters Annual membership to the Queensland Association of School Tuckshops	Increasing whole schools healthy eating environment Increasing promotion and availability of green (everyday) foods and decreasing amber and red foods within the school environment Supporting tuckshops to meet the Smart Choices Strategy Motivate tuckshops to prioritise a healthy food and drink service
Accreditation	Brain break resources and support	Resources, tips and support to implement or improve their fruit and veg classroom breaks	Creates a consistent healthy eating behaviour each day at school in a positive eating environment with peers and role models (teachers)
Accreditation	Food garden resources and support	Provide assistance to schools to set-up or improve their school food garden in collaboration with community partners Resources to support schools in maintaining the school food garden as a key part of the school routine and to embed it into the wider school environment (e.g. tuckshops, curriculum)	Consistent visual reminder of where fruits and vegetables come from Medium to facilitate practical skills, knowledge and awareness of planting, picking, eating and composting foods Increases availability of fruit and vegetables to supply school tuckshop, classroom fruit and veg breaks, school breakfast program, students without access to fruit and veg
Accreditation	Food and drink policy	Resources to support schools to develop a healthy food and drink policy in consultation with their school communities	Facilitates a consistent healthy eating approach across all areas of the school environment, connecting the school food environment from education and school food programs to engaging parents and community organisations Support a sustainable healthy school food environment
Accreditation	Teacher professional development session	60-minute professional development in-service delivered by the Healthy Eats Community Development Officer. Outcomes focus on increasing understanding of the Healthy Eats	Increases whole-school engagement and implementation of the Healthy Eats program Increasing awareness and implementation of evidence-based

		program, evidence-based nutrition guidelines, school policies and guidelines that support healthy eating and strategies to support healthy eating at school and home.	strategies to support healthy eating at school and home
	Breakfast program resources	Resources and tips to support schools to implement or improve their school breakfast program Provide assistance to schools to set-up or improve their breakfast program in collaboration with community partners	Creates a consistent healthy eating behaviour each day at school in a positive eating environment with peers and role models (teachers)
	Healthy Eats lesson plans	Ready to use nutrition lesson plans and resources	Supporting teachers to deliver nutrition education which is curriculum-aligned and reinforces the Australian Dietary Guidelines Contributes to changing the status quo of food attitudes and behaviour at school
	Healthy Eats Facebook group and termly newsletter	An electronic newsletter and Facebook group for Healthy Eats school staff, parents and stakeholders sharing: Activities and initiatives of our Healthy Eats schools Tips and recipes for healthy eating at school and home Program updates, insights and accreditation advice	Increasing awareness and implementation of healthy eating initiatives and behaviours at school and home Forum to facilitate sharing of activities between Healthy Eats schools
	Life Education Hub	A free online platform for school and parents to engage in a wide variety of resources that facilitate healthy food knowledge and behaviours	Increasing awareness and implementation of healthy eating behaviours at home and school
	Collaboration with other key organisations	Collaboration across different sectors to support school communities to develop and/or maintain healthy eating environments	Increased access and support for healthy school food environments

Healthy Eats Program Implementation

The Healthy Eats program is designed to be implemented across the school year. Community Development Officers (CDO) regularly liaise to support schools and schedule a minimum of one face to face meeting per term with each Healthy Eats School. During these touchpoints, data is collected and added to monitoring spreadsheets. This data is gathered via a number of methods including, self-reported from schools, observations made by CDO during touchpoints and school visits and some verified data (e.g., surveys and school policy documents shared with Life Education Queensland). Healthy Eats schools receive a suggested implementation schedule, which is shown on the next page.

Healthy Eats Program Implementation Guide

Term 1

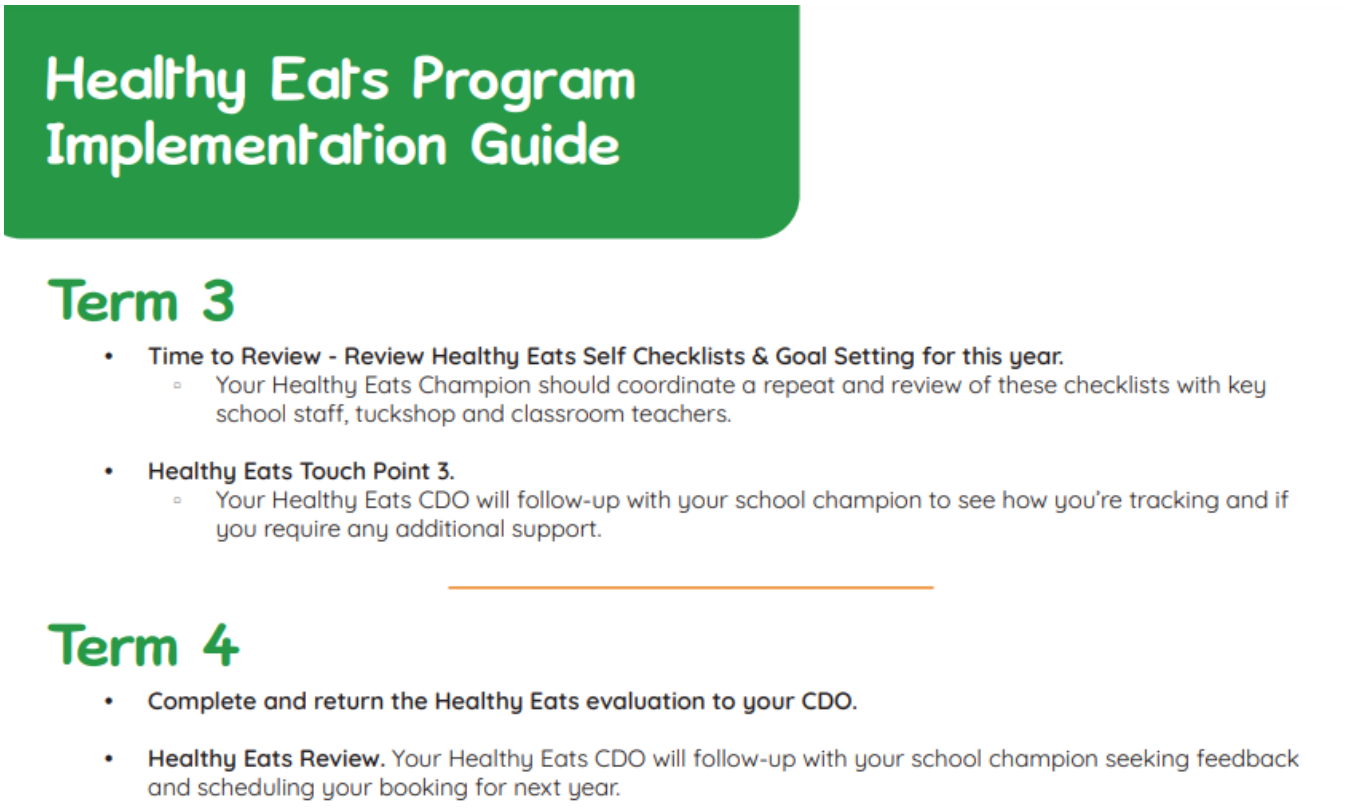
- **Identify the HEALTHY EATS CHAMPION in your school.**
  - The key contact for driving Healthy Eats initiatives and resources.
  - Meet with your Healthy Eats Community Development Officer (CDO) for your program orientation (Toolkit Meeting)
- **Display the Healthy Eats information posters** provided around the school and use Healthy Eats newsletter tips and resources to help inform students and parents about the Healthy Eats program happening in your school.
- **Tuckshop menu audit and recommendations (completed by QAST)**
  - If the Healthy Eats team do not already have a copy of your current tuckshop menu for review, please send it ASAP to your Healthy Eats CDO.
- **Complete Healthy Eats Self Checklists & Goal Setting for this year**
  - Healthy Eats School Checklist, Tuckshop Checklist and Classroom Checklists (See inside your Healthy Eats Toolkits for these workbooks).
  - Identify the Healthy Eats initiatives that meet the needs of your school and when the best time is to implement them. Send your Healthy Eats Goals to your CDO.
  - Decide whether your school will be working towards Accreditation
- **Review or create your School Healthy Food and Drink Policy**
  - Appoint a Healthy Eats committee to drive this.
  - See your Healthy Eats Toolkit for tips to get started.
- **Healthy Eats Touch Point 1**
  - Your Healthy Eats CDO will follow-up with your school champion to see how you're tracking and if you require any additional support.
- **Healthy Eats Teacher Professional Development Workshop**
  - Book in dates with your Community Development Officer
  - Year 5 teacher Healthy Eats program meeting
  - Share program information with teachers

Term 2

- **Healthy Eats Classroom Nutrition Module**
  - Delivered by the Life Education Queensland Team (Please Note: Your module will be booked in
  - a week convenient for your school and may not be in term 2).
- **Healthy Eats Classroom Fruit and Vegetable Passport Challenge**
  - Runs for 4 weeks after the classroom nutrition module.
  - A 'Passport Pack' will be sent to your school prior to the classroom module.
- **Healthy Eats Touch Point 2**
  - Your Healthy Eats CDO will follow-up with your school champion to see how you're tracking and if you require any additional support.



Healthy Eats Timeline



Evaluation of Healthy Eats (2021) Program

This report evaluates the Healthy Eats (2021) Program. The evaluation report includes a description of the schools that were involved in the 2021 version of the program, and a process evaluation to examine how the Healthy Eats program was implemented within schools—in other words an examination of how schools elected to engage with the program, and the degree of utilisation of the components offered to them. Then, an outcome evaluation is conducted to assess the extent to which students have retained the knowledge and maintained or changed their fruit and vegetable consumption intake at or aligned to recommended daily fruit and vegetable intake recommendations as a result of participation in the Healthy Eats Program. Assessment of behavioural change is a complex undertaking given that different outcomes can be considered desirable. When consumption rates are at daily recommended levels maintenance (or no change) of behaviour is the desired outcome. When consumption rates are under recommended guidelines an increase aligning to the recommended daily consumption rates is the desired outcome. Finally, when consumption rates exceed dietary guidelines to the detriment of the individuals' health a reduction in consumption to align to the daily recommended intake levels is the desired outcome.

Evaluations are vital to understand the efficacy of interventions. Evaluations aid in pinpointing improvement opportunities to inform the design and implementation of future programs. The evaluation of the Healthy Eats Program was driven by two major objectives: first, to examine changes in knowledge on recommended fruit and vegetable consumption among students. Second, to explore whether the Healthy Eats Program resulted in the desired changes to students' fruit and vegetable consumption. To address these objectives, this evaluation utilises self-report data collected by Life Education Queensland from schools and students participating in the Health Eats program. The data analysed included pre-post surveys from both the Healthy Eats Nutrition Module and Passport competition.

The next section provides a summary on the relevant literature pertaining to the evaluation of health behaviour change initiatives. After that, this report outlines the methodology used to conduct the evaluation, including presenting the data collection and analysis approach. Then, findings and results are presented, which flow into the discussion and implications for Healthy Eats. The report concludes with recommendations aimed at strengthening future evaluations.

LITERATURE REVIEW

The complexity of obesity and diet-related health problems calls for a multifactorial approach [1, 2]. While schools are not able to solve the obesity epidemic alone, they represent a key setting for public health strategies aiming to lower or prevent the prevalence of overweight and obesity [3-5]. School-based programs are effective in influencing children's learning environments at a young age, thereby facilitating the development of healthy habits, which results in improved health and wellness later in life [6]. Previous research shows the more actions implemented by schools to support and promote healthy eating, the more likely students are to adopt healthy eating practices [7, 8]. Several Healthy Eats Program components are aligned with research establishing the effectiveness of promotion of healthy eating in a school setting, including classroom nutrition education (e.g., Nutrition Module), teacher and parental involvement (e.g., Healthy Eats teacher professional development session, regular school newsletter, information sessions), a supportive classroom environment (e.g., Healthy Eats Brain Break), and a supportive school environment (e.g., a tuckshop with healthy foods and drinks, a vegetable garden and a healthy food and drink policy).

Nutrition education is a corner stone of health behaviour change [9-12]. Teachers are powerful contributors to students' learning [13] and integral to promoting healthy eating habits in a school environment. However, teachers require training, ongoing support and resources to achieve sustained behaviour change program implementation [10, 14]. For example, a study by Contento, Balch [15] found that students had retained higher nutritional knowledge and attitude scores when taught by trained teachers compared to being taught by untrained teachers. While teachers represent an important channel through which nutritional knowledge is disseminated, parental involvement is needed in the home to facilitate knowledge and support healthy eating habits [16]. Parental involvement is crucial as parent behaviour influences what children learn, how children respond to their environment and what children expect of themselves [17-19]. Parental support is important given children consume about 65% of their total energy intake at home [20-22]. Furthermore, the content of lunch boxes prepared by parents was found to be directly related to behaviour, performance, achievement, and obesity-levels of children [23, 24], and studies suggest parents need support in selecting nutritious, convenient, inexpensive and appealing lunch box food/drinks for children to eat [25].

A positive school environment is also important to support students' healthy eating habits and attitudes to food. Vegetable gardens have been shown to provide an engaging environment that can be used as an instructional tool in a range of subject areas, including nutrition [26, 27]. A range of intervention and evaluation studies have consolidated evidence for the effectiveness of vegetable school gardens in increasing children's preference for fruits and vegetables [28-33]. As part of the school environment, tuckshops have also been found to influence students' eating habits [34]. Many foods sold at tuckshops are often characterised by a lower nutritional value (e.g., snack foods), therefore it is imperative to encourage tuckshop involvement in promoting healthy eating in schools [35, 36]. However, a healthy tuckshop menu is not a panacea to developing healthy eating habits among students. A study in South Africa was unable to provide evidence that a tuckshop intervention alone is advancing children's eating habits [37]. Thus, as touched on previously, a multifactorial approach that involves multiple components both within the school environment as well as external to the school (e.g., the home) are needed to bring about change. Whether and how the different components work to produce lasting behaviour change requires monitoring and evaluation.

Evaluations are key to understanding the effectiveness of interventions [38]. Evaluations can be divided into process evaluation (whether an intervention is delivered as intended), outcome evaluation (whether an intervention resulted in changes in attitudes and behaviour) and social impact evaluation (an estimate of the impact on longer term health and social outcomes) [39]. Evaluations provide insight into program delivery and effectiveness, and unintended consequences, which inform the improvement of future interventions. This evaluation of the Healthy Eats Program is an outcome evaluation, focussed on determining whether the program achieved its primary goal (i.e., changing students' knowledge and consumption of the recommended serves of fruit and vegetables).

METHODOLOGY

The data used in this evaluation of the Healthy Eats Program was provided to Griffith University by Life Education Queensland. The data had been collected predominantly through self-reports, which were administered by both teachers and Healthy Eats Educators. Data collection can broadly be divided into data assessing the learning outcomes of the Nutrition Module (the Knowledge Survey) and data examining the behavioural outcomes of the program (data collected during the Passport Competition).

The Student Knowledge Survey data was collected in two stages. Two weeks prior to the commencement of the module, students filled out a pre-session survey, which was followed by post-session survey administered directly after students completed the module. The data collected in these pre- and post-surveys asked students to provide demographic information (i.e., age, gender, and ethnicity), whether they had been to a Life Education session previously, knowledge on recommended serves of fruit and vegetables, how often healthy foods should be eaten, what constitutes a healthy lunchbox snack and intention to choose more “everyday foods”.

Passport Competition data collection was twofold: first, Passport Competition student passports (i.e., surveys) were given to students to record daily (Mon – Fri) serves of fruit and vegetable intake one week prior to the start of the Nutrition Module. After the Nutrition Module, students used Passport Competition data for four consecutive weeks to record daily (Mon – Fri) serves of fruit and vegetable intake. Additional data was collected from both teachers and schools via self-reports, including teacher feedback and Nutrition Module surveys and school reflection surveys.

Before the start of the statistical analysis, the data was screened for missing values and outliers. To evaluate missing data, list-wise or pairwise deletion are commonly used [41]. Given the drawbacks of list-wise deletion, which removes an entire case, pairwise deletion was used. Pairwise deletion (available-case analysis) avoids discarding an entire case and therefore, maximises all data that is available for an analysis-by-analysis basis. For example, some cases in the individual-level analysis of the Passport Competition may lack pre-post vegetable consumption data but have sufficient data on pre-post fruit consumption. Instead of discarding the entire case, the data on vegetable consumption was retained and used in the analysis.

Data screening was also conducted to explore the data for potential outliers. Outliers can distort statistical analyses by inflating variability in a data set. To correct for outliers, two decision rules were put in place. In Australia, a nationally representative nutrition survey has established the range of intakes of fruit and vegetables for children. The mean vegetable intake for 9-11 year old’s is 2.3 serves with a standard deviation (SD) of 2.1 for each individual per day [42]. Based on this national average, we then calculated the maximum possible number of servings a child is likely to eat when it comes to serves of vegetables using the mean value of vegetable servings (i.e., 2.3) plus two standard deviations (following the empirical rule that states 95% of values fall within two standard deviations from the mean). Thus, the estimated maximum number of vegetables (rounded up) is 7 servings per day ($2.3 + 2.1 \times (2) = 6.5 \approx 7$). If students reported to have eaten equal to or more than 35 serves of vegetables per week (7 x 5 weekdays), the case was discarded as ‘highly unlikely’. Due to the similar pattern of distribution [43] when it comes to the national average of serves of fruit (i.e., 2.2), the same logic was applied ($2.2 + 2.1 \times (2) = 6.4 \approx 7$). For example, if students reported to have eaten equal to or more than 35 serves of fruits per week (7 x 5 weekdays), the case was discarded as ‘highly unlikely’. It should be noted here that the decision rules established were not intended to be aligned with the recommended daily intake of fruit (two serves) and vegetables (five serves). Rather, they were based on the amount of fruit and vegetable serves children eat on average, which was derived from a large national survey. The results were used as a benchmark to determine what is logically possible for a child to eat daily. This provided a cut-off point to identify outliers in the data set. Given the national survey data showed that on average, 9 to 11-year-olds eat about two serves of fruits and two serves of vegetables, a maximum weekly amount of 35 serves applied in both cases.

A series of statistical tests were used to analyse the effectiveness of the Healthy Eats intervention. To provide an overview of the sample, basic demographic analyses and means analyses were used, which included Chi-Square difference testing to test whether groups within the pre-post sample were different regarding age, gender, and ethnicity. Data from the Student Knowledge Survey was analysed using Independent Samples T-Tests and One Samples T-Tests. Independent Samples T-Tests, which compare the means of two independent groups were used to test for differences between pre-post variables such as knowledge on vegetable/fruit consumption using Nutrition Module data. For example, did the intervention increase students' knowledge on fruit and vegetable consumption? A supplementary One Sample T-Test was conducted for each pre- and post-variable to examine whether schools'/students' consumption behaviour is getting closer to the recommended fruit and vegetable guidelines (i.e., 2 fruit and 5 vegetables a day). The analysis of additional data of the Student Survey included means analyses and Chi-Square difference tests, which were based on manual coding of qualitative data. The coding of the data to explore qualitative pre-post data is detailed in Section 4.3.1. For Passport Competition data, which allowed for matching participants pre-post intervention, Paired Samples T-Tests in conjunction with One Sample T-Tests were employed to explore whether behavioural changes have occurred as a result of the Healthy Eats Program. Following data entry and cleaning, descriptive and inferential statistics were estimated. Statistical analysis was conducted using IBM SPSS Statistics (Version 28) for Windows.

RESULTS / FINDINGS

Program Involvement

In 2021, 19 schools participated in the revised version of the Healthy Eats program. These schools were located in five different regions, predominately in Northern Queensland with a few located in Southern Queensland. The characteristics and demographics for these schools are shown in Table 1 and Table 2 below.

Table 1. Summary of Schools Participating in Healthy Eats (2021)

School or Participation characteristic	Region 1	Region 2	Region 3	Region 4	Region 5	Total
Schools	8	2	6	1	2	19
Student enrolments: Total	4352	523	2381	630	633	8519
ATSI students	1066	126	204	19	157	1572
HE participation: Previous	7	1	3	0	0	11
New	1	1	3	1	2	8
Pathway: Accreditation	7	2	2	0	0	11
Core	1	0	4	1	2	8

Table 2. Demographics for each of the schools participating in Healthy Eats (2021)

School	Approx. student enrolments[1]	2020 ICSEA	Participated previously in HE	Pathway
School A	250	<900	Yes – 2019, 2020	Accreditation
School B	700	>1000	Yes – 2020	Core
School C	550	900-950	Yes – 2020	Accreditation
School D	800	950-1000	No	Accreditation
School E	100	950-1000	Yes – 2020	Accreditation
School F	100	950-1000	Yes – 2019, 2020	Accreditation
School G	450	950-1000	No	Accreditation
School H	250	>1000	Yes – 2020	Accreditation
School I	100	950-1000	No	Accreditation
School J	1650	<900	Yes – 2019, 2020	Accreditation
School K	300	>1000	Yes - 2020	Core
School L	100	950-1000	Yes - 2020	Core
School M	350	900-950	No	Core
School N	650	950-1000	No	Core*
School O	300	<900	No	Core
School P	850	950-1000	Yes – 2019, 2020	Core
School Q	300	<900	No	Accreditation
School R	250	>1000	Yes – 2020	Accreditation
School S	650	950-1000	No	Core

[1] All schools had ATSI student enrolments (ranging from 5% - 50% of total enrolments)

*Did not take up QAST membership

Implementation Outcomes (Process Evaluation)

Program Components Targeting Students (Individual)

Both the core pathway and the accreditation pathway target individual students through the classroom nutrition module, and the classroom fruit and vegetable passport competition. The Healthy Eats classroom nutrition module was delivered to 19 schools, 50 classes and 1035 students. The Passport Competition involved 19 schools, 49 classes and a total of 1516 student responses were collected (i.e., pre-program (n = 706); post-program (n = 810)).

The classroom nutrition module was well received by teachers. Twenty-six teachers provided a teacher feedback survey, with 100% saying they would recommend that their school re-book Healthy Eats. The feedback survey assessed the content and delivery of the module, how well the module met the needs of their students, program continuation and rebooking, and perceived need for the program.

Table 3. Teachers' rating of the Healthy Eats classroom module

	Unsatisfactory	Satisfactory	Good	Excellent
Module content	0%	0%	16%	84%
Module delivery	0%	0%	16%	84%

Table 4. Teachers' rating of need for Healthy Eats classroom module & module fulfillment of student needs

	No need	Some need	Significant need	Very significant need
Need for module	0%	11.5%	53.9%	34.6%
	Strongly disagree	**Disagree**	**Agree**	**Strongly agree**
Meets students' needs	0%	0%	15.4%	84.6%

Table 5. Teachers' intention to conduct health education activities with their class after the visits and use Life Education teacher resources as part of these?

No	Yes
0%	100%

Table 6. Teachers' willingness to recommend that the school re-book Healthy Eats

No	Yes
0%	100%

Program Components Targeting Families, Friends, Peers, and Social Networks (Interpersonal)

Four components of the Healthy Eats program target the interpersonal influences surrounding children. Providing information to families is part of the core pathway, whereas establishing a student leadership group, and use of Healthy Eats promotional posters are part of the accreditation pathway. The fourth interpersonal component (the parent lunchbox competition) was available for parents from any of the schools involved in the program to enter. The utilisation of interpersonal components is summarised in Table 7, noting each school's utilisation of that component when they entered the program (beginning) and at the end of the most current year of the program (2021). Note that some schools (for example those involved in the pilot program) had entered the program prior to 2021. The ways each component was implemented is described in the paragraphs that follow.

Table 7. Utilisation of the interpersonal components of Healthy Eats within schools, from 2019-2021

HE Component	Student Leadership Group		Information to Families		Healthy Eats School Posters		Components used (total)
School	**Baseline**	**End**	**Baseline**	**End**	**Baseline**	**End**	
School A		●		●		●	3
School B		●		●		●	3
School C		●		●		●	3
School D		●		●		●	3
School E		●		●		●	3
School F		●		●		●	3
School G		●		●		●	3
School H		●	●	●		●	3
School I		●	●	●		●	3
School J		●		●		●	3
School K			●	●		●	2
School L				●		●	2
School M				●		●	2
School N				●		●	2
School O				●		●	2
School P				●		●	2
School Q		●		●		●	3
School R		●	●	●		●	3
School S				●		●	2
TOTAL	**0**	**12**	**4**	**19**	**0**	**19**	

HE Component	Parent Lunchbox Competition
Available to parents for all participating schools	●

Student leadership group

Twelve schools established a student leadership group who ran activities to promote healthy eating, including all 11 schools in the accreditation pathway and 1 school in the core pathway. Student leaders planned and implemented a range of activities, including:

- Sharing healthy eating tips and ideas at parades
- Helping tuckshop staff to prepare fruit and vegetable platters
- Providing fruit and vegetable snacks at school events
- Holding a fruit and vegetable naming contest
- Organising a whole-school cooking event
- Organising for a fruit bowl to be in the office for students and the school community to access and gained support from a local supermarket to keep this stocked
- Visiting other classes to share healthy eating tips and snacks
- Developing a recipe book featuring fruit and vegetables

Information to families

Short healthy eating tips and ideas for school newsletters and social media pages, recipes, handouts, and information sheets about the Healthy Eats program were available for schools to access on the Life Education Hub as well as provided directly to schools. Information was also posted in the Healthy Eats Facebook group and Life Education Queensland Facebook page for schools to share on their social media pages. All 19 schools provided healthy eating information to families via mediums such as social media and school newsletters, four schools of which were not doing so pre-program. One school, who had provided healthy eating information to families previously, did not

maintain this provision, and were supported to achieve this again in 2021. All children participating in the Healthy Eats classroom module were given a recipe card to take home and were encouraged to make the recipes at home, reinforcing and extending the skills learnt in the module to the home environment. Towards the end of 2021, a healthy lunchbox talk for families was developed to meet the goals of one school. This focused on quick, inexpensive healthy food options for lunchboxes and delivery was piloted as part of their pre-prep orientation.

Healthy Eats school posters

All 19 schools displayed posters promoting nutrition messages such as the Australian Guide to Healthy Eating and the Healthy Eats program poster compared to zero pre-program. Fifteen schools displayed these in all classrooms and four displayed them in year 5 classes only or common areas of the school.

Parent lunchbox competition

Information was provided to all participating schools to share with their parent community. The competition aimed to further engage parents and provide information regarding healthy food and drink choices. All eligible entrants had an equal chance to win as the winning entrant was randomly drawn. Nine entries were received, and the winner received a fruit and vegetable hamper.

Program components targeting the social and wider school community (organisational, community)

Ten components target the wider influences surrounding children. One (Tuckshop Resources) is part of the core pathway, and four (Food & Drink policy, Food Gardens, Brain Break, Teacher Professional Development Sessions) are part of the accreditation pathway. The remaining components are available to all schools during the program. The utilisation of organisational/community components is summarised in **Table 8**, and described afterwards.

Table 8. Utilisation of organisational/community components of Healthy Eats within schools (continued next page)

HE Component	Food & Drink Policy		Smart Choice Compliant Tuckshop		Food Gardens		Brain Break	
School	**Baseline**	**End**	**Baseline**	**End**	**Baseline**	**End**	**Baseline**	**End**
School A		●		●	●	●		●
School B				●		●		●
School C		●			●	●		●
School D		●			●	●		●
School E		●			●	●	●	●
School F		●			●	●	●	●
School G		●		●		●	●	●
School H	●	●				●		●
School I		●			●	●	●	●
School J				●		●		●
School K					●	●	●	●
School L							●	●
School M			NA[1]	NA[1]	●	●	●	●
School N			NA[2]	NA[2]	●	●	●	●
School O			●	●			●	●
School P					●	●		
School Q		●	●	●		●		●
School R					●	●	●	●
School S						●		●
TOTAL	**1**	**9**	**2**	**6**	**11**	**17**	**10**	**18**

NA[1] School not included; NA[2] School did not participate

Table 8. Utilisation of the organisational/community components of Health Eats within schools (cont.)

HE Component	Breakfast Program Resources/Support		Healthy Eats lesson plans		Teacher Professional Development Session			Components used in 2021*
School	**Baseline**	**End**	**Baseline**	**End**	**Baseline**	**End**	**Attendance**	
School A		●	●	●		●	19 (90%)	7
School B				●				4
School C	●	●		●		●	29 (81%)	6
School D				●		●	9 (100%)	5
School E	●	●	●	●		●	5 (100%)	6
School F				●		●	4 (100%)	5
School G	●	●	●	●		●	25 (96%)	7
School H	●		●	●		●	19 (65%)	5
School I	●	●		●		●	7 (78%)	6
School J		●		●				4
School K			●	●				3
School L				●				2
School M	●	●	●	●				4
School N	●	●						3
School O	●	●						3
School P	●		●	●				2
School Q	●	●	●	●		●	18 (90%)	7
School R	●		●	●		●	22 (88%)	4
School S			●	●				3
TOTAL	**11**	**10**	**10**	**17**	**0**	**10**		**86**

* Components from both parts of Table included in total

HE Component	Life Education Hub	HE Facebook Group and Term Newsletter	Program incentives/rewards
Available to all schools	●	●	●

Food and Drink Policy

Implementing a healthy food and drink policy is vital as it helps to facilitate a consistent healthy eating approach across all areas of the school environment. It provides a framework and guidance for all members of the school community, setting clear guidelines for success. An effective policy is one that is comprehensive and reflects all aspects of the school food environment, reflects a shared vision together with the priorities, needs and values of the school community, engages all stakeholders and is regularly reviewed, evaluated, and updated to meet the changing stakeholder priorities.

Key elements in developing, implementing, monitoring, and evaluating school nutrition policies include:

- Identifying and collaborating with all stakeholders, including staff, parents, volunteers, students
- Conducting an audit of the current school food and drink environment
- Drafting and seeking community feedback
- Incorporating feedback and distributing policy to all stakeholders
- Measuring success
- Monitoring, evaluating, and updating to ensure the policy continues to meet the needs of all stakeholders

All schools received a guide to developing a healthy food and drink policy in the Healthy Eats toolkit. Schools who elected to develop a policy were provided with a sample template that they could choose to adapt to their individual school context, in consultation with their school community. 8 schools, all of which were in the accreditation pathway, developed a food and drink policy and 1 school had a policy in place pre-program. See Appendix J for a sample policy developed by a participating school.

Tuckshop Resources & Support

An independent tuckshop menu health check was completed by the Queensland Association of School Tuckshops (QAST) pre and post Healthy Eats program in 2019 for 3 schools. In 2020, due to the impacts of COVID and school closures, menu health checks were not conducted. In 2021, menu health checks were completed pre-program for 12 schools. Two schools who had a tuckshop were not included in the baseline review in 2021 due to invalid data or not electing to take up the QAST membership. At the end of the program, a second menu health check was completed for tuckshops who had made changes to their menus that may affect their Smart Choices compliance (5 tuckshops). Due to resourcing changes, a second menu health check was not completed for tuckshops who had not made any changes to their menu (7 tuckshops). Self-reported information about menu changes and tuckshop engagement with the Healthy Eats program was also gathered through touchpoints completed by QAST and the Healthy Eats CDOs.

Of the 12 tuckshops, 2 had menus that complied with Smart Choices pre-program, 3 tuckshops developed menus compliant with Smart Choices throughout 2019 and 2020, and 1 further tuckshop achieved compliance in 2021.

In 2021, out of the 7 tuckshops who had menus that were not Smart Choices compliant pre-program:

- 1 tuckshop became Smart Choices compliant (accreditation school)
- 1 increased their rating but remained non-compliant (accreditation school)
- 3 tuckshops made changes to their menu but did not increase their rating (1 accreditation school and 2 core schools) e.g., removing some red items, making ‘greener’ versions of food, adding green items to the menu, and measuring sales
- 2 schools did not make any significant changes towards becoming Smart Choices compliant (1 accreditation, 1 core). It is worth noting that Smart Choices was not mandatory in these schools.

In addition to completing the menu health checks, Tuckshops engaged with the Healthy Eats program in other ways, including supporting student leadership teams to deliver activities that promote healthy eating, developing Healthy Eats meal deals promoting green menu items, and utilising food grown in the school vegetable garden.

Food Gardens

Schools who elected to establish or improve their vegetable gardens were connected with local community organisations who could provide garden expertise and resources (e.g., Bunnings). Resources and advice were also provided via the Life Education Hub or Community Development Officer on integrating the vegetable garden into the wider school environment (e.g., utilising produce in the tuckshop or classroom activities) and curriculum.

Eleven schools had an established garden pre-Healthy Eats program, and six schools created vegetable gardens with the support of community partners or monetary grants.

Brain Break Resources & Support

Resources to support schools to implement fruit and vegetable breaks in classes were available to schools on the Life Education Hub or provided to schools by the CDOs. Ten schools were implementing fruit and vegetable breaks every day in some or all classes pre-program compared to 18 post-program. Further, all the 18 schools are now implementing them every day in all classes across the school.

Breakfast Program Resources & Support

Resources to support schools to establish breakfast programs were available to schools on the Life Education Hub or via the CDOs. Schools were also connected to local organisations who could provide breakfast program resources or advice. Eleven schools had breakfast programs in place pre-program. Three schools have since ceased their breakfast program. Two schools established a breakfast program in 2021 that ran for 2-3 days per term and both schools were in the accreditation pathway.

Healthy Eats lesson plans

Healthy Eats lesson plans were available to schools via the Life Education Hub or directly from the Community Development Officer. Seventeen schools reported including nutrition lessons in all classes post-program compared to 10 pre-program, either using the Healthy Eats lesson plans or lessons from other sources.

Teacher Professional Development Session

The 60-minute Healthy Eats teacher professional development session was delivered to 10 schools reaching 157 teachers and other school staff. Outcomes of the session focus on increasing understanding of the Healthy Eats program, evidence-based nutrition guidelines, school policies and guidelines that support healthy eating and strategies to support healthy eating at school and home. All 10 schools who participated in the session, were working towards Healthy Eats accreditation. One of the schools working towards accreditation was not able to complete the professional development session, and none of the schools in the core pathway elected to book the session.

Teacher Evaluation of Professional Development Session

Of the 157 teachers that participated in the Teacher Professional Development sessions, 106 (68%) teachers completed a feedback survey evaluating the session. The evaluation findings are summarised below.

Table 9. Teacher Evaluation of Professional Development Session

	Strongly agree	**Agree**	**Disagree**	**Strongly disagree**
Meets teachers' needs	44 (41.5%)	54 (50.9%)	0 (0%)	8 (7.5%)*
	Excellent	**Good**	**Fair**	**Poor**
Session content	60 (56.6%)	45 (42.5%)	1 (0.9%)	0 (0%)
Session delivery	71 (67.0%)	34 (32.1%)	1 (0.9%)	0 (0%)

* Some strongly disagree may have been errors – all responses also rated the content and delivery as good or excellent and either left no other comments about the session or left some favourable comments about the session.

This survey also asked teachers to nominate their biggest takeaway from the session and how they plan to incorporate any learnings into their classroom. Under the category of 'the biggest takeaway' teachers identified the takeaway of learning how few Queensland children are eating the recommended serves of vegetables. Other common takeaways included teachers expressing thanks for the Healthy Eats resources available and ideas provided to support children to eat healthy, the importance of being a role model and not using red foods as rewards/prizes.

Some of the common ways that teachers said they will incorporate what they have learnt in their classrooms included:

- Implementing brain breaks or encouraging vegetables in brain breaks (not just fruit)
- Using less lollies as rewards
- Holding fruit and veg taste testings
- Role modelling healthy eating
- Incorporating healthy eating lessons in health units
- Looking at resources on the Hub

Life Education Hub

All participating schools were provided with information on how to access the Life Education Hub in the Healthy Eats School toolkit. The Hub was actively promoted to schools in the teacher professional development session and during termly touchpoints. Schools were encouraged to access Healthy Eats resources through the Hub as well as being provided resources directly via the Community Development Officer. 15 teachers from 10 schools accessed Healthy Eats resources on the Life Education Hub.

Program incentives/rewards

All schools who implemented the core program initiatives plus one additional accreditation criteria received a supermarket voucher to purchase items to further support healthy eating in their school. These rewards were used to have a healthy picnic for all classes who participated in the passport competition, supplies to establish, or maintain their school vegetable gardens, ingredients to hold whole-school healthy eating activities (e.g., a healthy recipe competition, providing healthy snacks at sports carnivals), classroom kitchen supplies.

Schools who achieved Healthy Eats accreditation received a grant to further support whole-school healthy eating initiatives. The impact of these will be evaluated in 2022.

Healthy Eats Facebook Group and Term Newsletter

The Healthy Eats Facebook Group and termly newsletter increased engagement with Healthy Eats schools and communities, sharing positive stories about Healthy Eats schools' achievements, program updates and advice, and promoted healthy eating recipes and information. Since July 2021, 107 Facebook posts were made, and 2 newsletters distributed. The first edition of the newsletter had an open rate of 8% by teachers and parents, and the second edition 7.2%. Over this period, the Healthy Eats parent database grew by 71%.

Collaboration with other key community organisations

Life Education Queensland engaged in several stakeholder relationships across the Healthy Eats program while community partnerships were also formed at an individual school level. Specifically, Life Education Queensland Stakeholders engaged:

- Queensland Association of School Tuckshops
- Bunnings – Activity Officers from individual stores and Qld store operations manager
- Foodbank Qld
- Pick of the Crop
- North Queensland PHN
- Gulf Savannah NRM

In addition to the above key stakeholders, partnerships were formed on a local level between individual schools and community organisations. Schools self-reported existing partnerships while new partnerships were recorded by Community Development Officers. These partnerships were established to support school communities to develop and/or maintain healthy eating environments and are shown below.

Table 10. Partnerships established with local community organisations

	Garden		Food supply		Breakfast program		Nutrition lessons	
School	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**
School A		●	●	●				
School B		●	●	●				
School C		●						
School D	●	●						
School E		●						
School F		●						
School G		●						
School H		●						
School I		●						
School J		●						
School K		●						
School L		●						

	Garden		Food supply		Breakfast program		Nutrition lessons	
School	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**
School M		●						
School N					●	●		
School O		●	●	●			●	●
School P	●	●						
School Q		●	●	●				
School R	●	●					●	●
School S								
TOTAL	**3**	**17**	**4**	**4**	**1**	**1**	**2**	**2**

Comparison between Core and Accreditation Pathway

The following compares the schools who elected to take the core pathway and those undertaking the accreditation pathway.

- Of the 11 schools working towards accreditation, 7 achieved accreditation, 4 met the halfway point.
- Of the 8 schools on the core pathway, 7 implemented all core initiatives plus at least one additional initiative
- Of the 7 schools who achieved accreditation, all but 1 had no tuckshop or the tuckshop met Smart Choices
- Of the 4 schools who did not meet accreditation, 2 schools had achieved all criteria except having a Smart Choices compliant menu
- By the end of the program, all accreditation schools had 9 or more program initiatives in place.
- By the end of the program, schools in the core pathway had 9 or less initiatives in place.

Table 11. Comparison between schools on the core and accreditation pathways

Initiative	**Core Pathway (8 schools)**			**Accreditation Pathway (11 schools)**		
	Pre	**Post**	**Increase**	**Pre**	**Post**	**Increase**
Healthy Eats student leadership team	0	1	1	0	11	11
Family nutrition engagement	3	8	5	4	11	7
Healthy eating promotional posters	0	8	8	0	11	11
Healthy food and drink policy	0	0	0	1	9	8
Smart Choices compliant menus	2/5 tuckshops	2/5 tuckshops	0	3/7 tuckshops	4/7 tuckshops	1
Vegetable garden	5	6	1	9	11	2
Fruit and vegetable break in all classes	6	7	1	8	11	3
Breakfast Program	3	3	0	5	7	2
Nutrition lesson plans in all year levels	6	6	0	7	11	3
Healthy Eats professional development attendance	0	0	0	0	10 schools 157 teachers	10 schools 157 teachers
Number of schools to achieve core/accreditation	**0**	**7**	**7**	**0**	**7**	**7**

Key Implementation Outcomes

Table 12 provides a summary of the progress made through the Healthy Eats program, from the initial pilot stage through to the most current version, in 2021. Schools have implemented many of the initiatives. The exception was the breakfast program initiative—which many school found difficult to maintain during the COVID pandemic.

Table 12. Summary of key initiatives implemented during the Healthy Eats program – 2019 to 2021:

Initiative	Baseline	End	Achieved through HE
Healthy Eats student leadership group	0	12	+12
Information to families	4	19	+15
Healthy Eats school posters	0	19	+19
Healthy food and drink policy	1	9	+8
Smart Choices compliant menus (out of 12 tuckshops)*	2	6	+4
Food gardens	11	17	+6
Brain break everyday	10	18	+8
Breakfast Program	11	10	-1
Nutrition lesson plans in all year levels	10	17	+7
Healthy Eats professional development attendance	0	10 schools	+10 schools
	0	157 teachers	+157 teachers

* 14 schools had tuckshops and 13 took up the QAST membership, 1 school excluded as did not have baseline menu health check

Feedback from Schools

Finally, the feedback from schools involved in the Healthy Eats program has been very positive. Comments have highlighted many parts of the program, demonstrating that value that schools see from involvement in the program. Below is a selection of quotes from schools about the impact of the Healthy Eats program:

> *We have seen a really positive change in our student's food choices since we started the Healthy Eats program, which has been great. One of the most surprising things we've noticed has been the importance of modelling. It's been a big factor in changing their purchasing habits. When students see their friends and teachers taking up the healthy choices and getting involved, they tend to try those items as well and generally find they really enjoy them*
>
> - School Tuckshop Convenor, 2021

> *The students enjoyed and gained knowledge from the Healthy Eats program. Students were willing to try different snacks throughout the term*
>
> - School Healthy Eats Coordinator, 2020

> *We just love having Life Education back again and again! Our school community loves all the educators, and the healthy eats program material is so important for our students*.
>
> - School Principal, 2021

> *The Healthy Eats program encouraged students to start thinking about healthy foods to bring to school, helped us to focus on aspects of healthy eating, and reflect on tuckshop processes with the convenor*
>
> - School Healthy Eats Coordinator, 2020

> *We have grown vegetables in our garden beds and the students have enjoyed harvesting and sharing the fruits of their labour! We have promoted the healthy food break in the classroom. This has had a positive effect on our students with the encouragement of only fruit, vegetables and cheese and biscuits being consumed at this time*
>
> - School Healthy Eats Coordinator, 2020

The Healthy Eats program brought more awareness to making healthy choices to snack on

- School Healthy Eats Coordinator, 2020

We now make most of our menu items here in the tuckshop from local ingredients. We used to have around an 80/20 split in the Tuckshop – 80% red/amber foods and 20% green foods, but we have been able to really improve this and it's now more like 50/50. I was a little hesitant about the new menu at first, and wondered how the kids would react, but it has been great, and the new items have been really popular!

- School Tuckshop Convenor, 2021

With the Healthy Eats program we've noticed the tuckshop really come on board and we've noticed the kids, what they're wanting to purchase from the tuckshop has changed. Also, in the lunchboxes that improvement and with the teachers encouraging the fruit and vegies every day.

- School Behaviour and Wellbeing Co-ordinator, 2021

I've seen the kids grow from the program, they are actually retaining the information because I feel it is so engaging and hands on

- School Behaviour and Wellbeing Co-ordinator, 2021

Everything the kids have learnt and are participating in has helped them make better choices when they are at home and at school

- School Healthy Eats Co-ordinator, 2021

Life Education covers the HPE units through the Healthy Eats program and so giving students the ideas of what they can do to eat healthy, taking those ideas home, bringing those to school, I have seen wonderful changes through the program and the ideas of even progressing through each day what healthy fruit snacks and vegetables they are eating helps them target what they need to improve on

- School Classroom Teacher, 2021

Outcome Evaluation

This section presents the results of the outcome evaluation, beginning with analyses of the responses from the Student Survey (Knowledge) followed by analyses of the Passport Competition data (behaviour). Each section commences with a sample description, followed by statistical tests that examine changes in the measures during Healthy Eats (2021) program. These analyses aim to determine whether students attained greater knowledge of the recommended serves of fruit and vegetables, (measured by the pre-post knowledge survey) and whether a potential increase in knowledge was translated into behaviour change (measured by the Passport Competition data).

Student Survey (Knowledge)

Sample description

Overall, for the Student Knowledge Survey, 1868 pre-post responses were collected (i.e., pre-intervention (n = 933); post-intervention (n = 935)) from 19 schools. The demographic information for the students who completed these surveys is presented in Table 13. Please note that those cases that were removed due to missing values or outliers are still included in this table and will be highlighted in each of the statistical tests following the sample description.

Table 13. Sample demographics – Nutrition Module (from survey data)

Characteristic	Category	Pre		Post	
		n	***%***	***n***	***%***
Gender	Male	422	44.8%	437	46.5%
	Female	467	49.5%	448	47.7%
	Prefer not to say	44	4.7%	50	5.3%
	Missing	10	1.1%	4	0.4%
Age	8-years-old	3	0.3%	3	0.3%
	9-years-old	118	12.5%	116	12.4%
	10-years-old	599	63.5%	598	63.7%
	11-years-old	196	20.8%	194	20.7%
	12-years-old	23	2.4%	22	2.3%
	13-years-old	1	0.1%	1	0.1%
	Missing	3	0.3%	5	0.5%
Ethnicity	Non-indigenous	732	77.6%	714	76.0%
	Aboriginal	65	6.9%	118	12.6%
	Torres Strait Islander	84	8.9%	39	4.2%
	Aboriginal and Torres Strait Islander	56	5.9%	58	6.2%
	Missing	6	0.6%	10	1.1%
Program participation	First timer's	386	40.9%	387	41.2%
	Previously attended	557	59.1%	552	58.8%
	Missing	0	0%	0	0%
Pathway	Core	405	42.9%	399	42.5%
	Halfway/in progress	288	30.5%	290	30.9%
	Full/completed	250	26.5%	250	26.6%
	Missing	0	0%	0	0%
Tuckshop	No	77	8.2	78	8.3%
	Yes	866	91.8	861	91.7%
	Missing	0	0%	0	0%
Vegetable garden	No	248	26.3%	249	26.5%
	Yes	695	73.7%	690	73.5%
	Missing	0	0%	0	0%
	Total	**943**	**100%**	**939**	**100%**

Chi-square difference tests were conducted to test for group differences in terms of gender, age, and ethnicity between pre- and post-intervention. For gender, a Chi-square difference test was not significant (χ^2 (2) = 1.037; p = 0.595), indicating no difference across the participants. A second Chi-square difference test was not significant (χ^2 (5) = 0.031; p = 1.000), indicating no difference in age groups across the participants in the pre-post samples. A third Chi-square difference test was significant (χ^2 (3) = 32.039; p < 0.001), indicating difference in terms of ethnicity across the participants in the two samples. Post-intervention, almost twice as many Aboriginal students and Torres Strait Islander students participated in the survey compared to the pre-session survey. While no differences were evident between gender and age groups pre and post, more Aboriginal students and Torres Strait Islander students participated in the post survey.

Analysis of Student Survey Data

To determine whether participation in the Healthy Eats Program resulted in changes in knowledge of recommended fruit and vegetable consumption, students' responses to Question 5) and Question 6) from the pre-survey, and Question 6a) and 6b) from the post-survey, were compared, which asked students to indicate their knowledge on recommended fruit and vegetables serves per day using a 5-point Likert-scale. Table 14 and Figure 1 show the students' responses for recommended number of serves of fruit, and Table 15 and Figure 1 show students' responses for recommended number of serves of vegetables.

Table 14. Students who correctly identified the recommended number of serves of fruit per day

Pre	Post
36.7%	93.4%

Figure 1. Student responses for the recommended number of serves of fruit per day

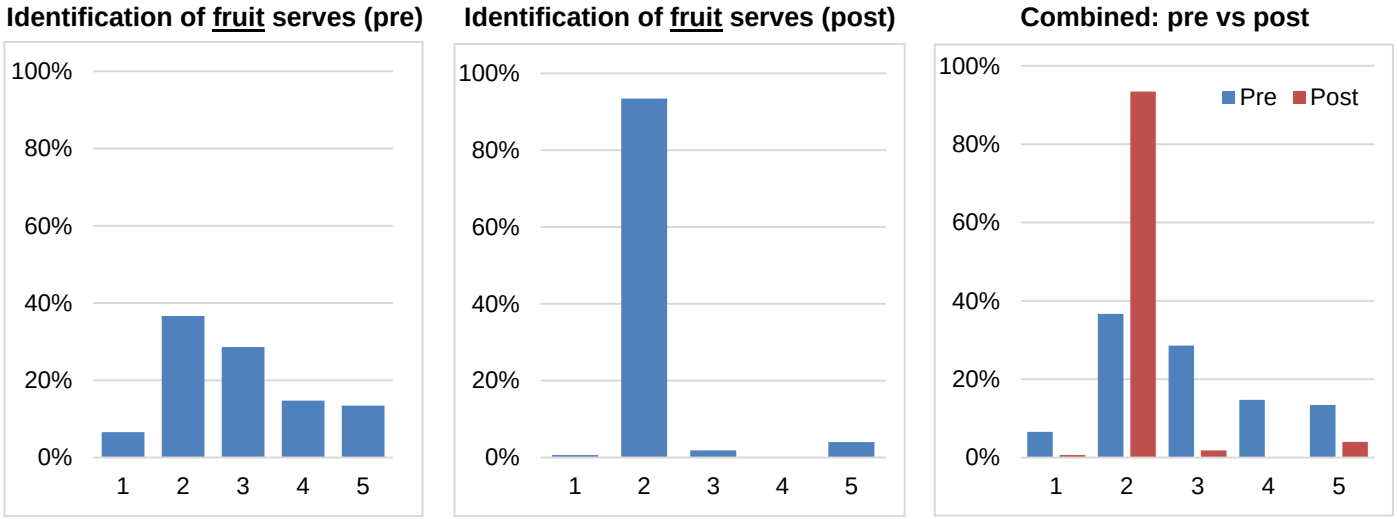
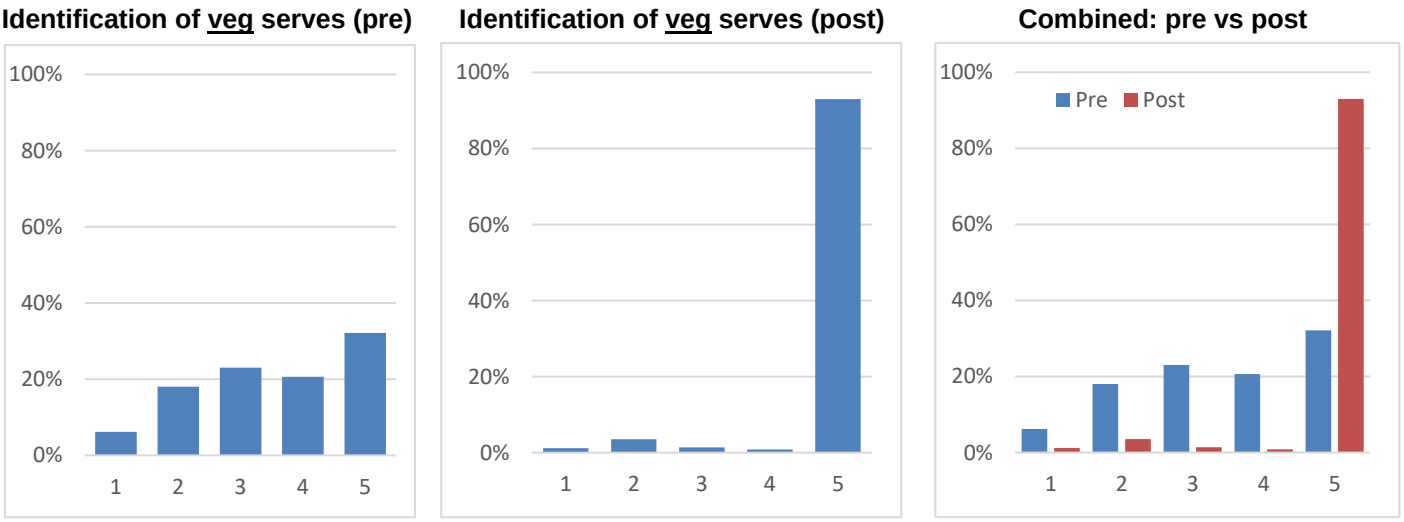


Table 15. Students who correctly identified the recommended number of serves of vegetables per day:

Pre	Post
32.1%	93.0%

Figure 2. Student responses for the recommended number of serves of vegetables per day



An Independent Samples T-Test was conducted to determine whether the degree of knowledge change was significant. This was followed by a One Sample T-Test to examine if knowledge was moving towards the recommended number of serves of fruit (2) and vegetables (5). Combined data from all schools indicated that prior to participation in Healthy Eats students reported they should eat 2.92 serves of fruit a day and post-participation, an average of 2.13 serves per day was evident in line with Australian guidelines—a significant change ($t(1419) = 18.44$, $p < .001$). Prior to participation in Healthy Eats students reported they should eat 3.55 serves of vegetables a day and post participation an average of 4.81 serves per day was evident, which is much closer to Australian guidelines—also a significant change ($t(1466) = -26.12$, $p < .001$). This indicates the Healthy Eats program positively influenced students' knowledge of the recommended serves of fruit and vegetables. Table 16 below presents the results of the Independent Samples T-Test for each of the schools.

Table 16. Independent Samples T-Test results – Nutrition Module

		Pre-intervention		Post-intervention				
		n	mean	n	Mean	t(df)	p	diff
School A	Fruit serves	42	3.0	41	2.2	4.235 (66)	<.001	● ↓
	Veg serves	41	3.6	41	5.0	-6.418 (45)	<.001	● ↑
School B	Fruit serves	87	2.9	84	2.0	7.796 (86)	<.001	● ↓
	Veg serves	84	3.8	85	5.0	-10.129 (85)	<.001	● ↑
School C	Fruit serves	56	2.5	55	2.1	2.221 (83)	0.029	● ↓
	Veg serves	56	3.4	55	4.7	-5.949 (100)	<.001	● ↑
School D	Fruit serves	11	2.8	12	2.5	0.611 (21)	0.547	-
	Veg serves	12	2.8	12	4.8	-4.642 (22)	<.001	● ↑
School E	Fruit serves	19	2.7	20	2.2	1.648 (26)	0.102	-
	Veg serves	17	2.9	20	4.9	-5.171 (22)	<.001	● ↑
School F	Fruit serves	13	2.9	13	2.0	2.382 (12)	0.026	● ↓
	Veg serves	12	4.0	13	5.0	-2.449 (11)	0.018	● ↑
School G	Fruit serves	66	2.9	67	2.0	5.398 (78)	<.001	● ↓
	Veg serves	64	3.2	66	5.0	-10.04 (72)	<.001	● ↑
School H	Fruit serves	38	2.6	40	2.2	1.95 (70)	0.053	-
	Veg serves	40	4.3	40	4.8	-2.38 (74)	0.020	● ↑
School I	Fruit serves	18	3.1	18	2.2	3.083 (31)	0.004	● ↓
	Veg serves	18	3.9	18	5.0	-4.486 (17)	<.001	● ↑

		Pre-intervention		Post-intervention				
		n	mean	n	Mean	t(df)	p	diff
School J	Fruit serves	132	3.2	131	2.2	8.04 (206)	<.001	● ↓
	Veg serves	130	3.4	132	4.7	-9.927 (214)	<.001	● ↑
School K	Fruit serves	22	2.8	22	2.3	1.519 (42)	0.136	-
	Veg serves	22	3.6	22	4.3	-1.618 (42)	0.113	-
School L	Fruit serves	15	3.4	15	2.0	5.957 (14)	<.001	● ↓
	Veg serves	15	3.4	15	4.8	-4.537 (28)	<.001	● ↑
School M	Fruit serves	40	2.8	40	2.1	3.603 (54)	0.001	● ↓
	Veg serves	40	3.5	40	4.8	-5.638 (70)	<.001	● ↑
School N	Fruit serves	20	2.9	19	2.2	2.674 (34)	0.012	● ↓
	Veg serves	20	3.5	19	4.8	-4.591 (32)	<.001	● ↑
School O	Fruit serves	63	3.3	63	2.1	6.615 (85)	<.001	● ↓
	Veg serves	63	3.7	64	4.8	-6.013 (93)	<.001	● ↑
School P	Fruit serves	69	2.8	63	2.0	6.441 (75)	<.001	● ↓
	Veg serves	68	3.2	63	4.8	-9.492 (106)	<.001	● ↑
School Q	Fruit serves	78	2.7	78	2.3	2.822 (139)	0.005	● ↓
	Veg serves	78	3.2	79	4.7	-8.163 (127)	<.001	● ↑
School R	Fruit serves	56	2.6	57	2.2	2.352 (92)	0.020	● ↓
	Veg serves	57	4.4	57	4.7	-2.098 (106)	0.038	● ↑
School S	Fruit serves	85	3.2	87	2.1	9.071 (132)	<.001	● ↓
	Veg serves	84	3.5	88	4.8	-8.666 (147)	<.001	● ↑
Total	Fruit serves	**930**	**2.9**	**925**	**2.1**	18.44 (1419)	<.001	● ↓
	Veg serves	**921**	**3.5**	**929**	**4.8**	26.12 (1466)	<.001	● ↑

Overall, the results show that knowledge changed significantly among students within all schools, with exception of School D and School K. When it comes to knowledge of the recommended daily fruit serves, all schools but School D (p=0.547), School H (p=0.053) and School K (p=0.136) showed a significant change in knowledge following participation in the Healthy Eats program. Likewise, all schools but School K (p=0.113) observed a significant increase in knowledge of the recommended daily vegetable serves.

To examine these changes in the context of the key lessons in the program, it was necessary to test if students' knowledge was in accordance with the recommended daily serves of fruit and vegetables, at either timepoint. Consider two examples: the first being a school where the data shows students' knowledge of vegetable serves improved and is now close to the recommended number; and the second being a school where the data shows students' knowledge of vegetable serves also improved but is still some distance from the recommended number of serves. To understand whether these changes indicated students were moving towards, or meeting the knowledge goals, two One Sample T-Tests were conducted, which are presented below in Table 3 and Table 4. Rather than determining whether there was a significant change in students' knowledge of recommended serves, these tests determine whether students' knowledge of the recommended serves was (on average) accurate at either point—beforehand, meaning they did not need to change, or afterwards, meaning their knowledge was now accurate.

Table 17 (next page) shows that student knowledge within several schools were already close to the goal of two serves of fruit per day pre-intervention, including School C (2.5), School H (2.6) and School R (2.6). Overall, in most schools, knowledge regarding the recommended serves of fruit intake moved towards the goal of two serves per day. Particularly strong changes in knowledge towards the goal of two serves of fruit post-intervention were observed at School A (-28.3%), School B (-29.8%), School E (-27%), School F (-29.8%), School G (-28.4%), School I (29.1%), School J (-31.7%), School L (-41.2%), School M (-25.7%), School N (-25.5%), School O (-34%), School P (-28.7%) and School S (-34.9%). Those schools where knowledge remained different to the mean score of 2 serves overestimated their number of fruit serves. While still moving towards the goal of two serves of fruit per day, School D displayed the highest post-intervention mean score of 2.5. Taken together, more than two-thirds (i.e., 68.4%) of

schools can be considered as having achieved the goal, as their students can accurately report knowledge of the recommended serves of fruit after participation in the Healthy Eats program.

Across the 19 schools, the overall movement towards correctly identifying the recommended five serves of fruit was strong. Post intervention, the average for the 19 schools was 2.15 serves of fruit, being a variance of only 7.5% from the recommended 2 serves of fruit a day. This compared favourably with 2.9 serves pre- intervention, being a variance of 45% from the recommended serves.

Table 17. One Sample T-Test results fruit – Nutrition Module

Fruit serves (Test value = 2)								
School		**n**	**mean**	**t(df)**	**P**	**diff**	**mean diff**	**Δ**
School A	pre	42	3.0	5.755 (41)	<.001	●	1.0	-28.3%
	post	41	2.2	1.432 (40)	0.08	-	0.1	
School B	pre	87	2.9	7.796 (86)	<.001	●	0.9	-29.8%
	post	84	2.0	n/a*	-	-	-	
School C	pre	56	2.5	3.365 (55)	<.001	●	0.5	-14.8%
	post	55	2.1	1.63 (54)	0.054	-	0.1	
School D	pre	11	2.8	2.043 (10)	0.034	●	0.8	-11.3%
	post	12	2.5	1.483 (11)	0.083	-	0.5	
School E	pre	19	2.7	2.281 (18)	0.017	●	0.7	-27.0%
	post	19	2.0	n/a*	-	-	-	
School F	pre	13	2.9	2.382 (12)	0.017	●	0.8	-29.8%
	post	13	2.0	n/a*	-	-	-	
School G	pre	66	2.9	5.976 (65)	<.001	●	0.8	-28.4%
	post	67	2.0	1.000 (66)	0.16	-	0.0	
School H	pre	38	2.6	3.822 (37)	<.001	●	0.6	-13.7%
	post	40	2.2	1.842 (39)	0.037	●	0.2	
School I	pre	18	3.1	4.486 (17)	<.001	●	1.1	-29.1%
	post	18	2.2	1.000 (17)	0.166	-	0.2	
School J	pre	132	3.2	10.89 (131)	<.001	●	1.2	-31.7%
	post	131	2.2	2.998 (130)	0.002	●	0.2	
School K	pre	22	2.8	3.645 (21)	<.001	●	0.8	-17.7%
	post	22	2.3	1.322 (21)	0.100	-	0.3	
School L	pre	15	3.4	5.957 (14)	<.001	●	1.4	-41.2%
	post	15	2.0	n/a*	-	-	-	
School M	pre	40	2.8	4.365 (39)	<.001	●	0.8	-25.7%
	post	40	2.1	0.902 (39)	0.186	-	0.1	
School N	pre	20	2.9	3.943 (19)	<.001	●	0.9	-25.5%
	post	19	2.2	1.000 (18)	0.165	-	0.2	
School O	pre	63	3.3	8.001 (62)	<.001	●	1.3	-34.0%
	post	63	2.2	2.097 (62)	0.02	●	0.2	
School P	pre	70	2.8	6.445 (69)	<.001	●	0.8	-28.7%
	post	70	2.0	-0.575 (69)	0.284	-	0.0	
School Q	pre	78	2.7	5.574 (77)	<.001	●	0.7	-16.4%
	post	77	2.3	2.982 (76)	0.002	●	0.3	
School R	pre	56	2.6	4.172 (55)	<.001	●	0.6	-16.0%
	post	57	2.2	2.269 (56)	0.014	●	0.2	
School S	pre	85	3.2	11.437 (84)	<.001	●	1.2	-34.9%
	post	87	2.1	1.919 (86)	0.029	●	0.1	

*The t value was not computed due to a standard deviation of zero (all responses were identical).

When it comes to knowledge of the recommended amount of daily vegetable serves, Table 18 shows that none of the schools were close to the recommendation before program participation. This can be seen by the significant differences between the mean score pre-intervention compared to the recommended number (or the test value) of 5. Post-intervention, however, all schools showed positive changes in knowledge and moved towards the goal of five serves per day. Particularly strong changes were observed at School A (37.1%), School B, (30.1%), School C (38.1%), School D (70.1%), School E (70.1%), School G (54.7%), School J (41.1%), School M (37.4%), School N (38.3%), School O (31.5%), School P (49.5%), School Q (46.6%) and School S (35.9%). The results show that almost half of the schools (i.e., 47.4%) achieved the goal, as their students could accurately report the recommended number of vegetable serves post-intervention. The other half of schools where student knowledge was still different to the recommended number (or test value) of 5 serves, had all underestimated the number of recommended vegetable serves. While still reporting a positive change of 17.3% towards the goal of five serves of vegetables per day, School K observed the lowest post-intervention score of 4.3, relative to all other schools in the sample.

Across the 19 schools, the overall movement towards correctly identifying the recommended five serves of vegetables was strong. Post intervention, the average for the 19 schools was 4.82 serves of vegetables, being a variance of only 3.6% from the recommended 5 serves of vegetables a day. This compared favourably with 3.55 serves pre- intervention, being a variance of 29% from the recommended serves.

Table 18. One Sample T-Test results vegetables – Nutrition Module

Vegetable serves (Test value = 5)								
School		**n**	**mean**	**t(df)**	**P**	**diff**	**mean diff**	**Δ**
School A	pre	41	3.6	-6.84 (40)	<.001	●	-1.4	37.1%
	post	41	5.0	-1.000 (40)	0.162	-	0.0	
School B	pre	84	3.8	-10.288 (83)	<.001	●	-1.2	30.3%
	post	85	5.0	-1.000 (84)	0.16	-	0.0	
School C	pre	56	3.4	-9.023 (55)	<.001	●	-1.6	38.1%
	post	55	4.7	-2.257 (54)	0.014	●	-0.3	
School D	pre	12	2.8	-6.413 (11)	<.001	●	-2.3	72.7%
	post	12	4.8	-1.000 (11)	0.169	-	-0.3	
School E	pre	17	2.9	-6.104 (16)	<.001	●	-2.1	70.1%
	post	19	5.0	n/a*	-	-	-	
School F	pre	12	4.0	-2.449 (11)	0.016	●	-1.0	25.0%
	post	13	5.0	n/a*	-	-	-	
School G	pre	64	3.2	-10.669 (63)	<.001	●	-1.8	54.7%
	post	66	5.0	-1.000 (65)	0.161	-	0.0	
School H	pre	40	4.3	-4.521 (39)	<.001	●	-0.7	10.4%
	post	40	4.8	-1.94 (39)	0.03	●	-0.2	
School I	pre	18	3.9	-4.486 (17)	<.001	●	-1.1	26.9%
	post	18	5.0	n/a*	-	-	-	
School J	pre	130	3.4	-13.811 (129)	<.001	●	-1.6	41.1%
	post	132	4.7	-3.546 (131)	<.001	●	-0.3	
School K	pre	22	3.6	-5.257 (21)	<.001	●	-1.4	17.3%
	post	22	4.3	-2.46 (21)	0.011	●	-0.7	
School L	pre	15	3.4	-6.808 (14)	<.001	●	-1.6	41.2%
	post	15	4.8	-1.000 (14)	0.167	-	-0.2	
School M	pre	40	3.5	-8.051 (39)	<.001	●	-1.5	37.4%
	post	40	4.8	-1.711 (39)	0.048	●	-0.2	
School N	pre	20	3.5	-6.097 (19)	<.001	●	-1.5	38.3%
	post	19	4.8	-1.000 (18)	0.165	-	-0.2	

School O	pre	63	3.7	-7.792 (62)	<.001	●	-1.3	31.5%
	post	64	4.8	-1.93 (63)	0.029	●	-0.2	
School P	pre	69	3.3	-11.847 (68)	<.001	●	-1.8	49.5%
	post	70	4.9	-1.857 (69)	0.034	●	-0.1	
School Q	pre	78	3.2	-11.303 (77)	<.001	●	-1.8	46.6%
	post	78	4.7	-2.926 (77)	0.002	●	-0.3	
School R	pre	57	4.4	-4.481 (56)	<.001	●	-0.6	9.0%
	post	57	4.7	-2.32 (56)	0.012	●	-0.3	
School S	pre	84	3.5	-12.053 (83)	<.001	●	-1.5	35.9%
	post	88	4.8	-2.35 (87)	0.011	●	-0.2	

*The t value was not computed due to a standard deviation of zero (all responses were identical).

The following sections present the results of a series of additional analyses. First, analyses were conducted to test for differences between groups within gender (i.e., 'Male', 'Female' and 'Prefer not to say') as well as within ethnicity (i.e., non-ATSI students vs ATSI students) regarding their knowledge of the recommended daily serves of fruit and vegetables. Keeping the three groups (Aboriginal, Torres Strait and both Aboriginal and Torres Strait) separate resulted in low statistical power and therefore, the three groups were combined into one group (i.e., 'ATSI students). Non-Indigenous students are more advantaged than those with Indigenous background due to the differences in the average values of many health indicators between Indigenous Australians and non-Indigenous Australians [44, 45, e.g., 46, 47] and combining the groups permitted sufficient power to examine group differences (e.g. ATSI and non ATSI).

To test for differences within gender, a one-way analysis of variance (ANOVA) test was conducted. A statistical effect was found [F (2, 917) = 3.07, $p < .05$] between the groups for serves of fruit pre-intervention. Post-hoc tests (Tukey) revealed that the mean score for males (3.02) was significantly different from that of females (2.83). In other words, females displayed more accurate knowledge of the correct number of serves of fruit pre-intervention compared with males. No differences between the groups were found for the remaining variables, including fruit serves post-intervention [male mean=2.17 vs female mean=2.10; F (2, 918) = 1.29, $p = .28$] as well as vegetables serves pre- [male mean=3.50 vs female mean=3.57; F (2, 908) = 42, $p = .66$] and post-intervention [male mean=4.77 vs female mean=4.86; F (2, 922) = 2.63, $p = .07$].

For ethnicity, an Independent Samples T-Test was used to test the differences in knowledge between non-ATSI students and ATSI students. The results show that knowledge reported by non-ATSI and ATSI students were significantly different when it comes to knowledge of recommended daily fruit serves. Pre-intervention, the mean score for ATSI students of 3.13 (n = 205; SD = 1.28) compared with non-ATSI students of 2.86 ($n = 725$; $SD = 1.10$) was significantly higher ($t(294) = -2.72$, $p = .007$). Post-intervention, however, the mean score difference between ATSI students of 2.20 (n = 215; SD = 0.72) and non-ATSI students of 2.11 ($n = 710$; $SD = 0.57$) was non-significant ($t(300) = -1.72$, $p = .087$). In other words, while both ATSI and non-ATSI students moved closer to indicating knowledge of the correct amount of daily fruit serves, ATSI students were further away from the knowledge goal than non-ATSI students pre-intervention. The differences in knowledge scores for fruit serves were non-existent post-intervention. There were no differences between the groups in terms of knowledge on the recommended daily amount of serves of vegetables (pre-intervention: non-ATSI students mean=3.55 vs ATSI students mean=3.54; $t(919) = 0.07$; $p = .968$, post-intervention: non-ATSI students mean=4.82 vs ATSI students mean=4.78; $t(927) = 0.72$; $p = .174$).

Another set of analysis using Independent Samples T-Tests was conducted to test whether knowledge differed when comparing first-timers and those students who had participated in a previous Life Education session. Also, tests were undertaken to examine whether there are differences in knowledge between those students that went through the Core program, those schools were accreditation was 'in progress' or 'finished halfway' and those schools that were fully accredited. The intention was also to compare students at schools with and without tuckshops. However, given that most schools had a tuckshop (92% tuckshop vs 8% no tuckshop), an analysis of difference was not feasible.

Comparing first-timers (n = 379; M = 3.42; SD = 1.27) and those who had previously attended a Life Education session (n = 542; M = 3.63; SD = 1.27), a significant effect was found for knowledge on recommended number of serves of vegetables pre-intervention (t(919) = -2.40; p = .008). The result suggests that those students who previously attended a Life Education session had more accurate knowledge on the recommended daily number of serves of vegetables. No differences were detected for the remaining comparisons, including fruit serves pre-intervention (First-timers mean=2.99 vs previously attended mean=2.87; t(928) = 1.64; p = .051)) and post-intervention (First-timers mean=2.15 vs previously attended mean=2.12; t(923) = 0.71; p = .238)) as well as vegetable serves post-intervention (First-timers mean=4.82 vs previously attended mean=4.80; t(927) = 0.50; p = .31)).

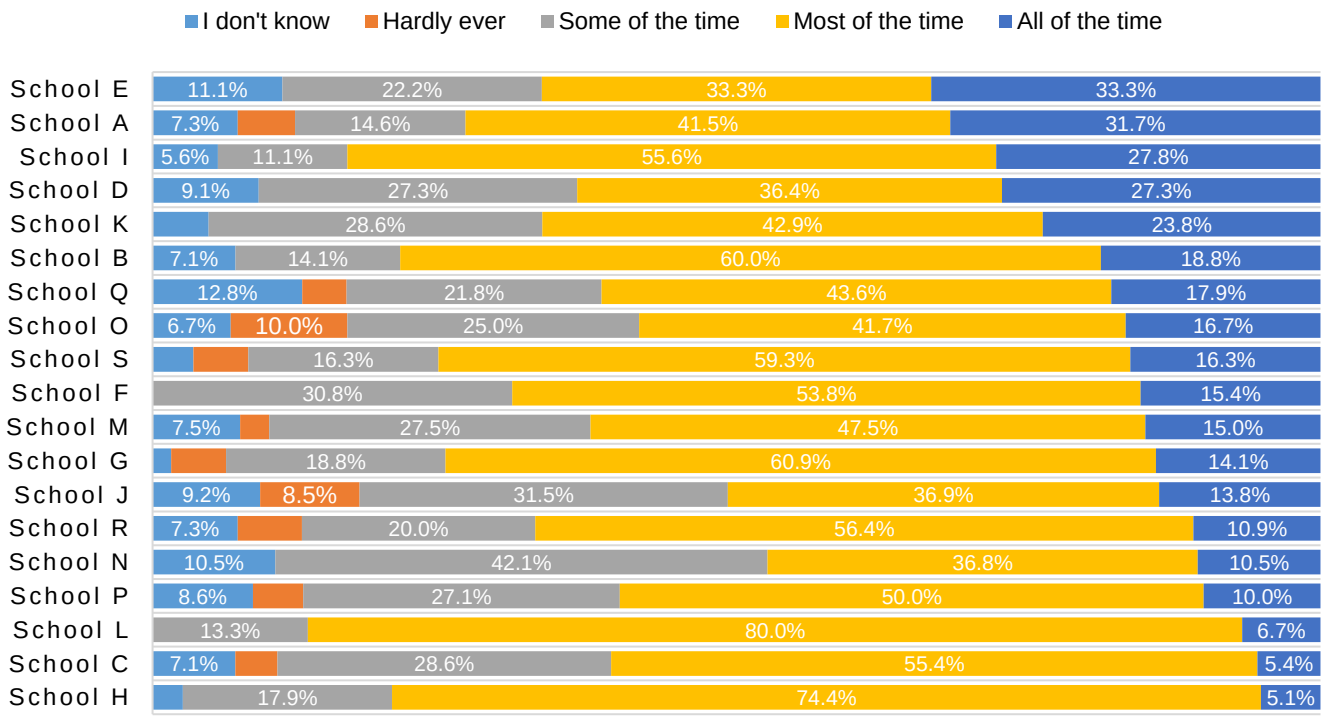
A similar result was observed when comparing knowledge of students at schools with (n = 680; M = 3.62) and without (n = 241; M = 3.34) a vegetable garden. A significant effect was found for knowledge on recommended number of serves of vegetables pre-intervention (t(919) = -2.98; p = .002). The result suggests that those students who attend schools with a vegetable garden had more accurate knowledge on the recommended daily number of vegetables than those students at schools without a vegetable garden. No differences were detected for the remaining comparisons, including fruit serves pre-intervention (no vegetable garden mean=2.98 vs veggie garden mean=2.90; t(928) = 1.04; p = .150)) and post-intervention (no vegetable garden mean=2.14 vs vegetable garden mean=2.13; t(923) = .230; p = .409)) as well as vegetable serves post-intervention (no veggie garden mean=4.82 vs vegetable garden mean=4.81; t(927) = 0.227; p = .410)).

Additional Findings from the Student Survey (Pre-survey)

The section below presents additional findings of those variables that did not qualify for a direct comparison between pre-post data. These included Question 7 (*How often do you think you eat healthy foods?*) and Question 8 (*Naming a healthy snack/knowing how to make a healthy lunchbox snack*) from the pre-session survey.

The results of a frequency analysis of Question 7 (*How often do you think you eat healthy foods?*) are presented in Appendix E (including missing values) and visualised in Figure 1 (excluding missing values). Overall, the mean scores suggest that, prior to the Healthy Eats program, most students perceived themselves to be eating healthy foods either ‘Most of the time’ or ‘All of the time’. A stronger contrast, however, is visible when comparing responses for ‘Some of the time’. As can be seen in Figure 2, half of the schools in the data set showed scores of 25% or higher in the category ‘Some of the time’, including School N (42.1%), School J (31.5%), School F (30.8%), School C (28.6%), School K (28.6%), School M (27.5%), School D (27.3%), School P (27.1%) and School O (25.0%). Responses in the categories ‘Hardly ever’ and ‘I don’t know’ were less prominent. Of note, however, were School O and School J, both of which saw responses in the ‘Hardly ever’ category of 10.0% and 8.5%, respectively. Taken together, the scores overall suggest that students at all schools perceived themselves as eating healthy foods most and/or all the time. Counts and percentages for each of the schools are provided in Appendix A.

Figure 3. Additional pre-survey analysis – Question 7 (*How often do you think you eat healthy foods?*) chart



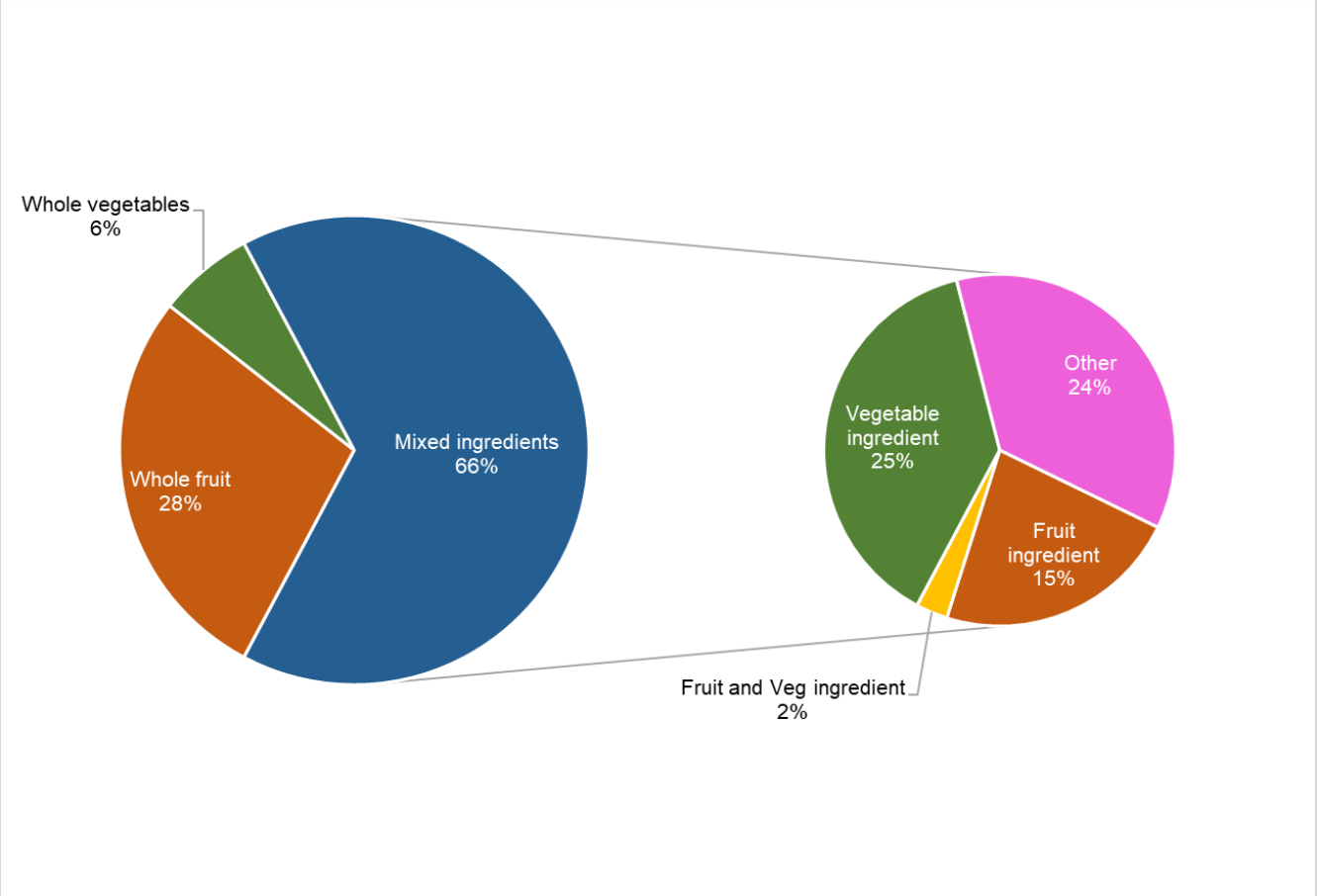
Question 8 (*Can you name a healthy lunchbox snack you know how to make?*), was an open-ended question. Data was analysed using manual coding. The coding was based on several decision rules to identify healthy/unhealthy snacks and ingredients. These decision rules were constructed to align with the goals of the program (fruit and vegetable consumption) while minimising the potential for researcher bias. In the first round of coding, 'Snack name' was coded as either whole fruits or whole vegetables—or were mixed ingredients and sent to the second round. In the second round, 'Ingredients to make the snack' was coded as having fruit ingredients, vegetable ingredients, both fruit and vegetable ingredients, or 'Other foods'. The category 'Other' contains all responses that did not include whole fruits/vegetables. Table 5 below provides some examples of the manual coding that was undertaken.

Table 19. Additional pre-survey analysis – Question 8 coding

Coding	Label	Response examples
Round 1	(1) Whole fruits	Apple, banana, orange, strawberries, peach, plums, grapes
	(2) Whole vegetables	Carrot, cucumber, celery, corn, tomato, capsicum
	(3) Mixed Ingredients	*[Coded in Round 2]*
Round 2	(3) Fruit ingredient	"Banana, ~~milk~~, ~~flour~~, ~~eggs~~" "Apple, ~~peanut butter~~"
	(4) Vegetable ingredient	"Carrot, ~~peanut butter~~"; "~~Chicken~~, lettuce, ~~cheese~~, ~~bread~~"
	(5) Fruit and vegetable ingredient	"Celery, ~~cream~~, sultanas"; "Celery, ~~peanut butter~~, sultanas"
	(6) Other foods	Crackers and cheese, meat, jam and bread, pastry, ham

The results in Figure 2 show that pre-intervention, responses for all schools combined identified 6% whole vegetables, 28% whole fruits while 66% required examination of the ingredients. In this category, 25% of all responses included vegetable ingredients, 15% fruit ingredients and 2% both fruit and vegetable ingredients. The remaining 24% contained solely unhealthy foods.

Figure 4. Additional pre-survey analysis – Question 8 - pie chart all schools combined



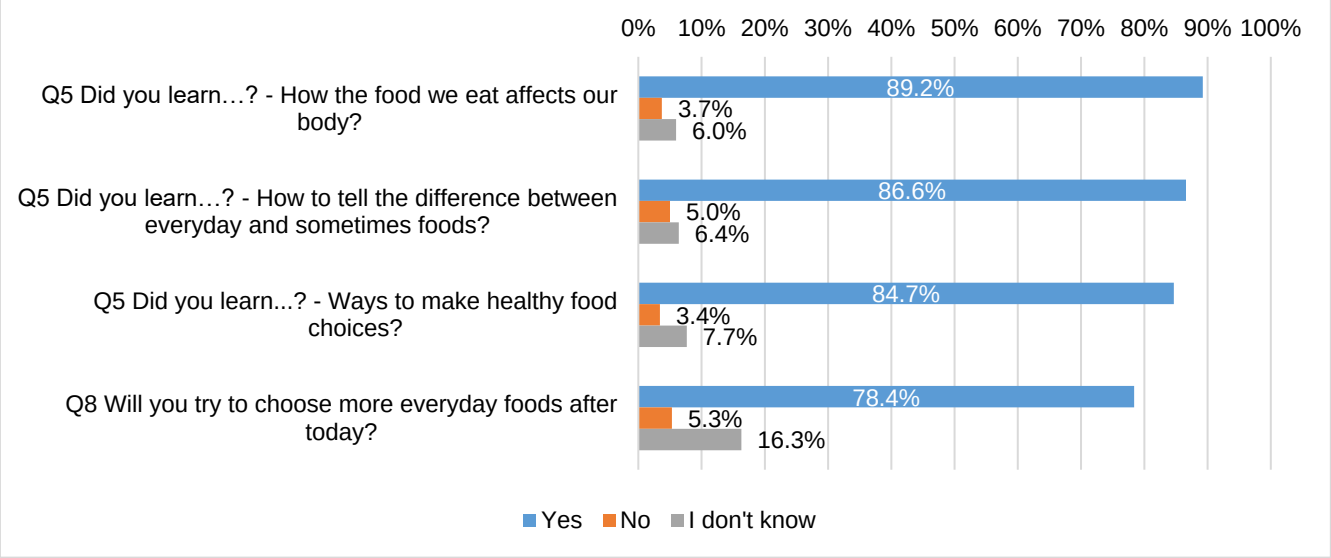
A series of Chi-square Goodness of Fit Tests were conducted to test whether individual schools differed from the overall average established in Figure 2 (i.e., 6% whole vegetables, 28% whole fruits, 68% Other (includes: 25% vegetable ingredient, 15% fruit ingredient, 2% fruit and vegetable ingredient, 24% other foods)). The results show that School B (X^2(5, n=82) = 12.93, p = .024), School C (X^2(4, n=53) = 20.01, p <.001), School H (X^2(5, n=40) = 12.17, p = .032) and School R (X^2(5, n=53) = 15.30, p = .009) differed significantly from the average. A detailed results table of the Chi-Square difference test is provided in Appendix B. The differences between schools are also visualised pictorially in Appendix F.

Additional Findings from the Student Survey (Post-survey)

The section below presents additional findings from questions asked in the post survey. These included Question 5 (Learning general knowledge), Question 7 (Learning lunchbox knowledge) and Question 8 (Choosing more healthy foods) were taken from the post-session survey.

Post-intervention, Question 5 (*Did you learn…?*), Question 7 (*Did you learn how to make a new healthy lunchbox snack today?*) and Question 8 (*Will you try to choose more everyday foods after today?*) were included in the analysis. Question 5 contains three sub-questions, which were analysed along Question 8 using a frequency analysis as shown pictorially in Figure 4.

Figure 5. Additional post-survey analysis – Question 5 and Question 8 – overall comparison



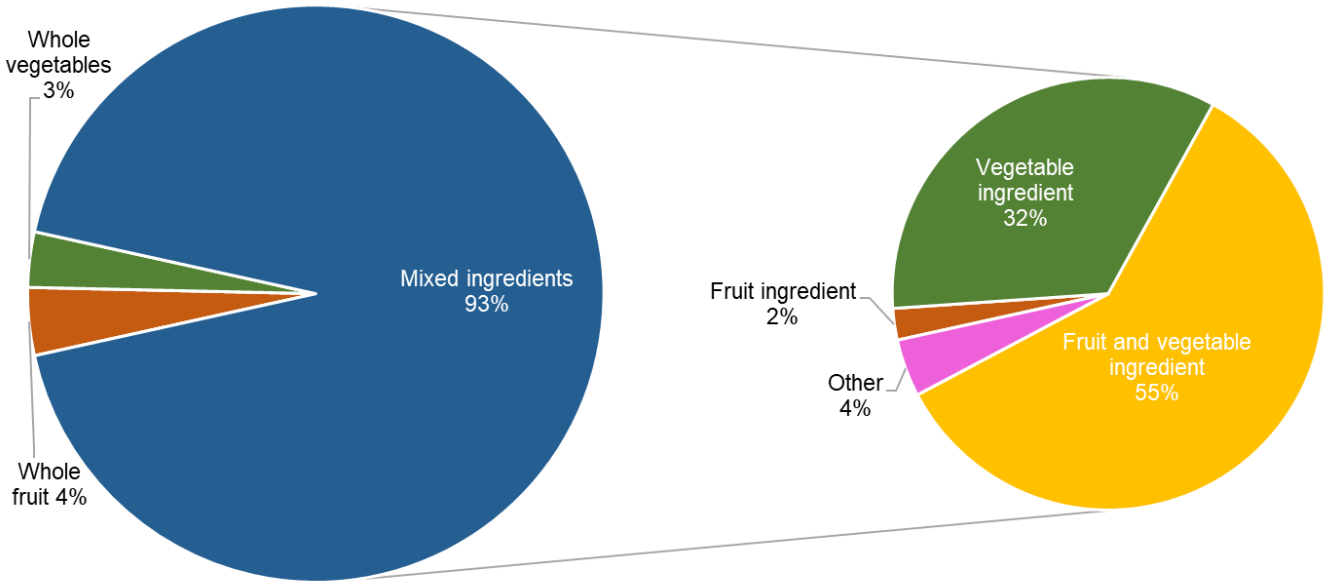
Overall, we can see that post-intervention, almost all students indicated they had learnt how to make healthy food choices (84.7%), how to tell differences between every day and sometimes foods (86.6%) and how the food we eat affects our body (89.2%). Interestingly, while only marginal in relation to the 'Yes' category, 'I don't know' was more often reported than 'No' for each of the questions. Question 8 (*Will you try to choose more everyday foods after today?*) was analysed using frequency analysis. On average, 79% responded with 'Yes', 16% with 'I don't know' and 5% with 'No'. Thus, the results suggest that post-intervention, the intention to choose more everyday foods was considerably high. Similar results are found when looking at differences on a school level, which are presented in the figures in Appendix G, Appendix H, Appendix I and Appendix K. Details regarding the school level comparison including counts and missing values are shown in Appendix C. Please note that all figures visualising the results considered missing data. Thus, to display missing data, not all bar charts show values up to 100%. As can be seen in the figure in Appendix G, the results for all schools predominantly indicated agreement with having learnt how food affects their body. While only marginal, a few schools observed that about 10% of students (and in some instances, slightly more) reported they did not learn how food affects their body, including School K (13.6%), School Q (11.4%), School R (10.5%), School M (10.0%), School A (9.8%) and School J (9.6%).

Turning to sub-question 2 of Question 5, which asked students to indicate whether students learnt how to tell the differences between every day and sometimes foods post-intervention, the following results were observed (see Appendix H). Again, all schools reported scores indicating strong agreement with having learnt the ability to tell the differences between every day and sometimes foods. Despite the overall very positive result, a few schools reported a combined 15-20% of 'I don't know' and/or 'No', including School Q (17.7%), School I (16.7%), School R (15.8%), School P (15.2%) and School G (14.9%).

Sub-question 3 of Question 5 asked students to indicate whether they learnt ways to make heathy food choices. As with sub-question 1 and 2, the results suggest that most students indicated they had learnt ways to make healthy food choices because of the intervention (see Appendix I). As with the previous sub-question 2, a few schools registered a marginal number of responses that fell into the 'I don't know' and/or 'No' category. Combined, the two categories make up 19.3% at School C, 16.7% at School I, 16.5% at School G, 16.2% at School J and 15.0% at School M. Notably, 16.7% at School D fell into the 'I don't know' category only.

Next, Question 7 (*Did you learn how to make a new healthy lunchbox snack today?*) was examined using the same coding rationale outline in Section 4.3.1. The results obtained post-intervention show considerable differences in contrast with pre-intervention (see Figure 8). The responses reveal that firstly, a greater number of healthy snacks was identified, which fall into the 'Other' category, representing 93% (vs 66% pre-session) on average. Of these 93%, 32% included vegetable ingredients, which is an increase of 7%-points when compared to pre-intervention. Importantly, over half of the responses in 'Other' included both fruit and vegetables, which is an increase of 53%-points (vs 2% pre-intervention). Fruit ingredients decreased post-intervention from 15% to 2%. Lastly, unhealthy foods made up 4% of 'Other', which compares favourably to the 24% of unhealthy foods identified pre-session. Overall, the responses collected in Question 7 changed considerably post-intervention.

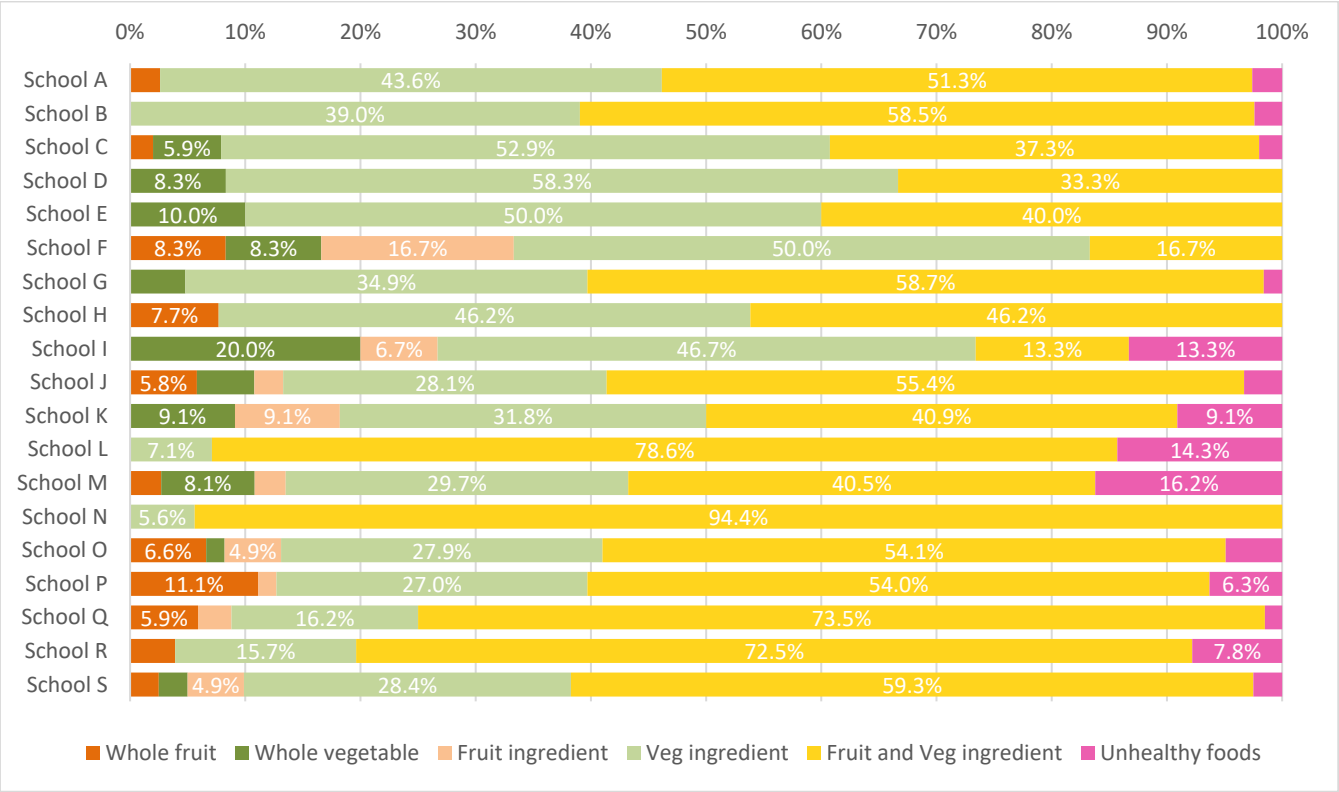
Figure 6. Additional post-survey analysis – Question 8 - pie chart all schools combined



When comparing responses on a school level, the contrast between pre- and post-intervention regarding the identification of a new healthy lunchbox snack that includes fruit and vegetables is substantial. Throughout the entire data pool, a strong increase in vegetable ingredients in responses was observed. While fruits decreased overall in the first instance of coding for all schools, those responses that contained vegetables as well as fruit and vegetables increased significantly. Those schools whose responses included a relatively small number of vegetables and fruit and vegetables pre-intervention such as School A, School C and School R saw a sharp increase in each of the categories (see Figure 8). For example, School A changed from 20% to 43.6% vegetable ingredient and from 7.5% 51.3% fruit and vegetable. Similar changes were observed at School C (17% [pre] vs 52.9% [post] veg ingredient; 0% [pre] vs 37.3% [post] fruit and veg ingredient) and School R (9.4% [pre] vs 15.7% [post] veg ingredient; 1.9% [pre] vs 72.5% [post] fruit and veg ingredient). Pre-intervention, the analysis revealed several schools that observed larger numbers of responses that fell into the category of unhealthy foods, including School N (52.6%), School M (48.4%), School D (36.4%), School J (33.3%). Post-intervention, however, almost no responses were categorised as

'Unhealthy foods', with exception of some schools whose responses contained a small number of unhealthy foods such as School M (16.2%), School L (14.3%) and School I (13.3%).

Figure 7. Additional post-survey analysis – Question 7 – school level comparison



To test whether any schools differed from the average established in Figure 7 (i.e., 3% whole vegetables, 4% whole fruits, 93% Other (includes: 32% vegetable ingredient, 2% fruit ingredient, 55% fruit and vegetable ingredient, 4% unhealthy foods)), a series of Chi-square Goodness of Fit Tests were conducted. The results suggest that School C (X^2(4, n=51) = 12.11, p = .017), School F (X^2(4, n=12) = 18.25, p = .001), School I (X^2(4, n=15) = 159.60, p <.001), School K (X^2(4, n=22) = 106.45, p <.001), School L (X^2(2, n=14) = 7.00, p = .030), School M (X^2(5, n=37) = 18.74, p = .002), School N (X^2(1, n=61) = 7.55, p = .006), School Q (X^2(4, n=68) = 11.15, p = .025) and School R (X^2(3, n=51) = 8.41, p = .038) differed significantly from the average. A detailed results table of the Chi-Square difference test is provided in Appendix D.

Passport Competition Data (Behaviour)

Eight schools reported data for individual students during the Passport Competition, and these responses were included in this analysis. These were School F, School G, School H, School I, School L, School P, School R and School S. Before commencing the analysis, the data was screened for outliers. Based on the decision rules determined in Section 3, a total of 18 cases (3.5% of the data pool) were identified and removed from the individual level analysis (i.e., 10 x School H, 6 x School S, 1 x School R, 1 x School L). Paired Samples T Tests indicated that on average across all schools, there were no differences between pre-post reported consumption, both for fruit serves and vegetable serves. Some differences were seen in reported fruit and vegetables consumption between pre- and post-intervention at some schools, as shown in Table 20.

Table 20. Individual level Paired Samples T-Test results – Passport Competition

		Pre-intervention			Post-intervention					
School		n	mean (week)	mean (daily)	n	mean (week)	mean (daily)	t(df)	p	diff
School F	Fruit serves	14	9.1	1.8	14	12.4	2.5	-1.912 (13)	0.078	-
	Veg serves	14	6.2	1.2	14	18.9	3.8	-8.597 (13)	<0.001	● ↑
School G*	Fruit serves	29	13.5	2.7	29	9.9	2.0	3.335 (28)	0.002	● ↓
	Veg serves	29	12.1	2.4	29	8.0	1.6	1.984 (28)	0.057	-
School H	Fruit serves	37	14.9	3.0	37	15.5	3.1	-0.374 (36)	0.711	-
	Veg serves	37	14.9	3.0	37	15.7	3.1	-0.603 (36)	0.551	-
School I	Fruit serves	18	8.3	1.7	18	7.7	1.5	0.573 (17)	0.574	-
	Veg serves	18	1.4	0.3	18	2.9	0.6	-1.534 (17)	0.143	-
School L	Fruit serves	15	10.5	2.1	15	14.7	2.9	-2.663 (14)	0.019	● ↑
	Veg serves	15	8.2	1.6	15	12.1	2.4	-2.755 (14)	0.015	● ↑
School P	Fruit serves	18	8.3	1.7	18	8.8	1.8	-0.296 (17)	0.771	-
	Veg serves	18	5.1	1.0	18	7.8	1.6	-1.925 (17)	0.071	-
School R	Fruit serves	67	10.5	2.1	67	10.6	2.1	-0.161 (66)	0.873	-
	Veg serves	68	12.3	2.5	68	12.9	2.6	-0.85 (67)	0.398	-
School S	Fruit serves	63	10.1	2.0	63	10.7	2.1	-0.686 (62)	0.495	-
	Veg serves	61	9.5	1.9	.61	8.8	1.8	0.67 (60)	0.505	-
Total	Fruit serves	261	11.0	2.2	261	11.2	2.2	-0.606 (260)	0.545	
	Veg serves	260	10.2	2.0	260	11.0	2.2	-1.71 (259)	0.089	

*School G pre-survey was based on the whole day, not just at school so their pre- and post-scores may not be directly comparable.

For fruit consumption, one school (School G) showed a significant decrease in fruit consumption (from 13.5 to 9.9), which represents a desired outcome given reported daily fruit consumption rates decreased to align with recommended daily consumption rates. At another school (School L) fruit intake increased significantly from 10.5 serves to 14.7 serves exceeding daily recommended consumption rates. No changes in daily fruit consumption rates were observed in many schools, which is the desired outcomes for Schools F, P, R, S where daily fruit consumption rates were aligned to the recommended levels of 2 serves per day.

Two of the eight schools increased vegetable consumption significantly (School F and School L) where serves of vegetables increased significantly post-intervention from a mean score of 6.2 to 18.9 (School F) and 8.2 to 12.1 (School L) serves on average per week. Five schools remained the same (School G, School H, School I, School P, School R and School S).

Taken together, the results of the Paired Samples T-Test show few changes, however, the lack of significant change for some of these schools could be the result of combining responses from students who increased their consumption, with the responses from students who decreased consumption. These two types of changes cancel each other out—creating an average of 'no change'. To assess how many students reported increases in consumption, decreases in consumption or no change in consumption, Table 21 divides the mean scores for each school into three categories: (1) increase, (2) no change and (3) decrease.

Table 21. Increases, decreases and no change in fruit and vegetable consumption at each school

		Fruit					Vegetables				
			Pre		Post			Pre		Post	
School		*n*	mean week	**mean daily**	mean week	**mean daily**	*n*	mean (week)	**mean daily**	mean (week)	**mean daily**
School F	Increase	9	7.8	**1.6**	12.9	**2.6**	13	6.7	**1.3**	18.5	**3.7**
	No change	0	-	**-**		**-**	0	-	**-**	-	**-**
	Decrease	4	14.8	**3.0**	11.3	**2.3**	0	-	**-**	-	**-**
School G	Increase	8	8.0	**1.6**	11.3	**2.3**	8	3.5	**0.7**	13.6	**2.7**
	No change	0	-	**-**	-	**-**	1	17.0	**3.4**	17.0	**3.4**
	Decrease	21	15.6	**3.1**	9.4	**1.9**	18	17.1	**3.4**	6.1	**1.2**
School H	Increase	21	12.0	**2.4**	18.3	**3.7**	20	13.2	**2.6**	20.0	**4.0**
	No change	2	12.0	**2.4**	12.0	**2.4**	1	8.0	**1.6**	8.0	**1.6**
	Decrease	14	19.7	**3.9**	11.7	**2.3**	15	18.7	**3.7**	11.7	**2.3**
School I	Increase	5	5.0	**1.0**	10.2	**2.0**	11	0.4	**0.1**	4.1	**0.8**
	No change	4	5.3	**1.1**	5.3	**1.1**	1	5.0	**1.0**	5.0	**1.0**
	Decrease	9	11.4	**2.3**	7.3	**1.5**	4	4.5	**0.9**	1.0	**0.2**
School L	Increase	10	8.2	**1.6**	15.8	**3.2**	11	7.2	**1.4**	13.4	**2.7**
	No change	2	12.0	**2.4**	12.0	**2.4**	1	9.0	**1.8**	9.0	**1.8**
	Decrease	3	17.3	**3.5**	13.0	**2.6**	2	17.5	**3.5**	13.5	**2.7**
School P	Increase	11	5.3	**1.1**	10.1	**2.0**	10	2.9	**0.6**	10.0	**2.0**
	No change	0	-	**-**	-	**-**	3	6.0	**1.2**	6.0	**1.2**
	Decrease	7	13.1	**2.6**	6.9	**1.4**	4	11.3	**2.3**	6.0	**1.2**
School R	Increase	28	7.7	**1.5**	12.8	**2.6**	33	10.4	**2.1**	16.0	**3.2**
	No change	8	9.5	**1.9**	9.5	**1.9**	6	12.7	**2.5**	12.7	**2.5**
	Decrease	31	13.3	**2.7**	9.0	**1.8**	29	14.3	**2.9**	9.4	**1.9**
School S	Increase	33	7.9	**1.6**	13.4	**2.7**	24	7.0	**1.4**	13.6	**2.7**
	No change	7	9.1	**1.8**	9.1	**1.8**	7	2.3	**0.5**	2.3	**0.5**
	Decrease	23	13.4	**2.7**	7.2	**1.4**	28	14.2	**2.8**	6.9	**1.4**
Total	Increase	125	8.2	**1.6**	13.7	**2.7**[a]	130	7.7	**1.5**	14.6	**2.9**[c]
	No change	23	9.1	**1.8**	9.1	**1.8**	20	7.5	**1.5**	7.4	**1.5**
	Decrease	112	14.56	**2.9**	9.0	**1.8**[b]	100	15	**3**	8.1	**1.6**[d]

[a] Significant increase (t(124)=14.876, p<0.001); [b] Significant decrease (t(124)=11.931, p<0.001)
[c] Significant increase (t(124)=16.201, p<0.001); [d] Significant decrease (t(124)=12.898, p<0.001)

For fruit, across all schools, more children reported increases in consumption. Increases in consumption were more often seen at School F, School H, School L, School P and School S—where consumption was mostly below 2 serves prior to the program, and at or above two serves afterwards. Decreases in consumption were more often seen at School I, School R and in particular, School G following the program. Fruit consumption at these schools was above 2 serves prior to the program, and only marginally below 2 serves afterwards. For vegetables, across all schools, more children reported increases in consumption. Increases in consumption were more often seen at all schools (except School S and School G). Of note are School F, School I and School L, all of which posted strong positive changes in the number of vegetable serves consumed. There are not enough responses in each category (increase, no change, decrease) to perform a robust statistical analysis, but this table suggests that for fruit, changes in both

directions resulted in children's consumption becoming more aligned with the daily recommendations. For vegetable consumption, more children increased their consumption, but a large proportion reported decreases in consumption.

One-Sample T-Tests were used to examine whether students (on average) reported consumption approaching the recommendations that they have been acquiring knowledge about as part of the Healthy Eats program. It needs to be highlighted that 'daily' serves reported ***only consider children's consumption at school*** (and not at home before or after school). Therefore, this is likely to be ***an underestimate of their daily consumption***. This test shows that at most schools, children were meeting their recommended daily fruit intake at school. Even with increases and decreases in consumption (Table 21) consumption became or remained aligned with the daily recommendations.

Table 22. Individual-level One Sample T-Test results fruit – Passport Competition

Fruit serves (reported consumption compared to 2 serves*)								
School		**n**	**Mean**	**Daily Mean**	**t(df)**	**p**	**Diff**	**Δ**
School F	Pre	14	9.1	1.8	-0.637 (13)	0.535	-	35.2%
	Post	14	12.4	2.5	2.148 (13)	0.051	-	
School G[1]	Pre	29	13.5	2.7	3.313 (28)	0.003	●	-26.8%
	Post	29	9.9	2.0	-0.146 (28)	0.885	-	
School H	Pre	38	14.7	3.0	4.637 (37)	<0.001	●	5.0%
	Post	37	15.5	3.1	5.924 (36)	<0.001	●	
School I	Pre	18	8.3	1.7	-1.696 (17)	0.108	-	-7.4%
	Post	18	7.7	1.5	-3.636 (17)	0.002	●	
School L	Pre	15	10.5	2.1	0.356 (14)	0.727	-	39.9%
	Post	15	14.7	2.9	3.443 (14)	0.004	●	
School P	Pre	18	8.3	1.7	-1.182 (17)	0.253	-	6.0%
	Post	18	8.8	1.8	-1.582 (17)	0.132	-	
School R	Pre	67	10.5	2.1	0.838 (66)	0.405	-	3.2%
	Post	68	10.8	2.1	1.365 (67)	0.177	-	
School S	Pre	63	10.1	2.0	0.079 (62)	0.937	-	8.2%
	Post	64	10.9	2.1	1.09 (63)	0.280	-	

[1]School G pre-survey was based on the whole day, not just at school so their pre- and post-scores may not be directly comparable.
*Based on goal of 2 serves of fruits per day (x 5 weekdays)

For completeness, the one-Sample T-Test was also performed for reported vegetable consumption. Again, 'daily' serves ***reported only considers children's consumption at school*** and given it is expected that many children would consume vegetables as part of an evening meal at home, ***this is likely to be a substantial underestimate of their daily consumption***. Indeed, this analysis shows that despite large proportional increases in vegetable consumption at school, children were not close to meeting their recommended daily vegetable intake at school (***nor is it expected that they would do so***).

Table 23. Individual-level One Sample T-Test results vegetables – Passport Competition

Vegetable serves (reported consumption compared to 5 serves*)								
School		**n**	**Mean**	**Daily Mean**	**t(df)**	**p**	**Diff**	**Δ**
School F	Pre	14	6.2	1.2	-17.919 (13)	<0.001	●	205.2%
	Post	14	18.9	3.8	-8.749 (13)	<0.001	●	
School G	Pre	29	12.1	2.4	-7.661 (28)	<0.001	●	-33.6%
	Post	29	8.0	1.6	-13.153 (28)	<0.001	●	
School H	Pre	38	15.1	3.0	-9.779 (37)	<0.001	●	4.4%
	Post	37	15.7	3.1	-7.663 (36)	<0.001	●	
School I	Pre	18	1.4	0.3	-42.996 (17)	<0.001	●	107.9%
	Post	18	2.9	0.6	-29.341 (17)	<0.001	●	
School L	Pre	15	8.2	1.6	-9.577 (14)	<0.001	●	48.5%
	Post	15	12.1	2.4	-7.349 (14)	<0.001	●	
School P	Pre	18	5.1	1.0	-14.352 (17)	<0.001	●	54.7%
	Post	18	7.8	1.6	-14.507 (17)	<0.001	●	
School R	Pre	68	12.3	2.5	-16.614 (67)	<0.001	●	5.0%
	Post	68	12.9	2.6	-15.474 (67)	<0.001	●	
School S	Pre	61	9.5	1.9	-13.122 (60)	<0.001	●	-0.7%
	Post	64	9.4	1.8	-14.54 (63)	<0.001	●	

*Based on goal of 5 serves of vegetables per day (x 5 weekdays)

DISCUSSION / INTERPRETATION

This report describes the findings from an evaluation of the of Healthy Eats Program, which was delivered by Life Education Queensland (LEQ). Healthy Eats aims to empower students to make healthier food choices by developing and sustaining a whole school approach. Broadly, the evaluation pursued two major goals:

1. To assess the extent of changes to students' knowledge of recommended fruit and vegetable consumption, and other healthy eating knowledge, as a result of participation in the Healthy Eats Program.
2. To explore whether students' fruit and vegetable consumption changes were reported by students following participation in the Healthy Eats Program.

Knowledge – Nutrition Module

A range of statistical tests were conducted to examine whether students' knowledge of the recommended serves of fruit and vegetables improved (as measured by the pre-post knowledge survey). A total sample size of 1868 pre-post responses (i.e., pre-intervention (n = 933); post-intervention (n = 935)) from 19 schools was used. The findings show that across the board, knowledge of the daily recommended serves of fruit and vegetables has improved as a result of participation in the Healthy Eats program. Furthermore, most schools (i.e., 68.4%) achieved the goal in that children were able to recount the recommendations for fruit consumption. Generally, knowledge of fruit serves were above recommendations prior to the program and moved downwards to meet recommendations. For the schools where children's knowledge did not meet the recommendations—many were improved, and only marginally different from recommendations (e.g., a change from 3.2 fruit serves pre-intervention to 2.1 fruit serves post-intervention). These changes should be recognised as a successful outcome. For many schools (i.e., 47.4%) children were able to recount the recommendations for vegetable consumption after participation in the program. Knowledge of recommended vegetable serves improved in most schools, but for several schools, knowledge remained some distance from recommended Australian dietary guideline levels.

Some group differences in knowledge were noted. Before participation in the Healthy Eats program, on average, females appeared to have better knowledge of the recommended number of daily fruit serves, which resonates with research on gender differences when it comes to fruit and vegetable knowledge, particularly at a later age (e.g., [48, 49]). However, there were no gender differences after the program suggesting that the Healthy Eats program played a role in balancing out any gender-related variations in knowledge. Likewise, when it comes to ethnicity, ATSI students were displaying significantly lower knowledge scores compared to non-ATSI students prior to participation. No differences however were found post-intervention, which suggests that the program was able to offset any pre-existing knowledge difference before participation.

The findings also suggest that regular exposure to Life Education programs has a beneficial effect on knowledge. Students who had previously attended a Life Education session had more accurate knowledge of the recommended daily number of serves of vegetables prior to participation in the Healthy Eats program. These differences were no longer evident following the program and were not present for fruit knowledge before or after the program. However, it is an indication of the benefit of regular exposure to classroom nutrition education. Findings suggest that students who attend schools with a vegetable garden have more accurate knowledge of the recommended daily number of vegetables than those students at schools without a vegetable garden. No differences were detected for knowledge of fruit serves. These results indicate that school gardens are of benefit to students and therefore, are an important program component of Healthy Eats.

Further findings from the Student Survey Indicated that after the program, an overwhelming number of students indicated they had learnt how to make healthy food choices (84.7%), how to tell differences between every day and sometimes foods (86.6%) and how the food we eat affects our body (89.2%). The findings from the qualitative analysis of the lunchbox snack question further support these findings, with children's descriptions of 'how to make a healthy snack' containing a much greater number of fruit and vegetables after the program. Over half of the responses describing snacks in the 'Mixed ingredients' category included both fruit and vegetables after the program, which is a substantial increase from 2% pre-intervention to 53% post-intervention. Also, other foods (those without fruit or vegetables), which made up only 4% of the 'Mixed ingredient' category post-intervention compared to the 24% of unhealthy foods identified pre-session. These findings demonstrate that the Healthy Eats program increased children's knowledge or awareness of how to make a healthy snack.

Taken together, we can conclude that student's knowledge changed significantly as a result of the Healthy Eats Program. Knowledge on the recommended daily number of serves of fruit and vegetables improved significantly at all schools. Further, the mean scores measuring intention to try to eat more healthy foods as well as the ability to identify healthy foods post-session solidify the strong positive impact the program had on students' knowledge. The next paragraphs will discuss the results of the Passport Competition data.

Behaviour - Passport Competition Data

To examine whether the Healthy Eats Program resulted in behavioural changes, Passport Competition data was used. Individual data existed for eight of the nineteen schools who participated in the Health Eats program. As a precursor to the analysis, a total of 18 outliers (3.5% of the individual level data set) were identified and discarded from the analysis.

The results showed that two schools posted significant changes for fruit consumption, one an average increase, and one an average decrease. Further analysis revealed some children reported increased fruit consumption bringing their consumption closer to the recommendations, and some children reported decreased consumption, but also closer to recommendations. At many schools, children reported fruit consumption at or very near the recommended levels after the program—indicating that these children may be translating the knowledge acquired during the program into behaviour.

When it comes to serves of vegetables, two schools had significant increases in average vegetable consumption. Similar to fruit, the reported consumption moved in both directions. Importantly, there were more children who reported increases in vegetable consumption, that those who reported decreases in consumption. Taken together, these findings indicate most schools started moving into the right direction following the Healthy Eats Program.

In summary, the evaluation of the Healthy Eats program indicates there were increases in students' knowledge of fruit and vegetable recommendations, which only partially translated into behavioural shifts. Recommendations on improving the Healthy Eats evaluation will be provided in the next section.

Limitations

The findings of this evaluation should be considered in light of any limitations. In the Student Knowledge Survey, the questions were not always the same in both the pre- and post-surveys. This makes it difficult to make direct comparisons between the time points. The phrasing and/or scale points of some of the questions in the post-survey may increase the risk of social desirability bias, for example, "Did you learn…" using only three answer options (i.e., 'Yes', 'No', 'I don't know') immediately after the Nutrition Module could lead students to feel socially pressured to agree (social desirability bias), thus answering with 'Yes'. Further, the richness of data yielded from a dichotomous scale (including 'I don't know') is limited and may be more insightful if multiple-choice answers, or more categories were included.

For the behavioural data (the passport data), an important limitation is the issue of outliers detected in the data set, which may have slightly distorted trends in the data. To minimise the issue of outliers, statistical detection techniques were used to identify and discard serious outliers. Second, the issue of missing data, particularly in the analysis of the Passport Competition meant that pre-post comparisons were not feasible for all schools. Third, the behavioural data was somewhat prone to error given the uncertainty of the meaning of zeros, blank cells, and an abnormal number of serves, all of which can have affected the evaluation negatively. However, where possible, decision rules based on prior research were employed to evaluate schools at least partially with missing data and/or abnormal values.

6. CONCLUSION / RECOMMENDATION

The process evaluation identified that participation in the Healthy Eats program had a substantial positive effect on the healthy eating environment in some schools, which was observed particularly in those schools that pursued Healthy Eats accreditation. The increase in vegetable gardens, fruit and vegetable breaks and improvements to tuck-shop menus in some schools that participated in Healthy Eats means that students in those schools have improved access to healthier food options and greater opportunity to eat healthy food than would have been the case before their involvement with the Healthy Eats program.

The outcome evaluation of Healthy Eats Program, delivered by Life Education Queensland (LEQ), showed improved knowledge of the recommended daily number of fruit and vegetable serves following the program, and some improvements to fruit and vegetable consumption behaviour. The findings also indicate the suitability of Healthy Eats for a variety of students, showing a reduction in the 'knowledge gap' between males and females, and ATSI and non-ATSI students following the program—indicating that these students responded well to the learning component of the program. In addition to this, the evaluation has shown a positive effect from repeated exposure to Life Education activities, and from supportive school infrastructure in the form of vegetable gardens. Overall, this evaluation supports the effectiveness and importance of conducting classroom and school-based initiatives to increase Healthy Eating knowledge.

We recommend adjusting the phrasing and/or scale points of some of the questions in the post-survey of the Student Knowledge Survey. This would assist to minimise social desirability bias and increase the richness of data. For example, asking the question "Did you learn…" using only three answer options (i.e., 'Yes', 'No', 'I don't know') immediately after the Nutrition Module could lead students to feel socially pressured to agree (social desirability bias), thus answering with 'Yes'. Further, the richness of data yielded from a dichotomous scale (including 'I don't know') is limited. Instead, the question could be rephrased into a multiple-choice quiz to tap into actual learning effects.

We recommend collecting data at an individual level within all schools for the Passport Competition. Using individual level data allowed for more sophisticated statistical testing, which in turn generated stronger and richer insights into any possible changes compared to the analyses conducted on data collected at a school or class level. Individual level data also provides the opportunity to change to lens to a class or school level—by grouping data points within a class, or within a school. This preserves statistical power and renders independent class and school level data collection redundant. Also, we recommend strengthening the recording of data where possible to improve data quality. Drawing meaningful conclusions from some of the findings from the Passport Competition data in this evaluation was not always possible due to missing values, extreme outliers, or general uncertainty of the validity of data points. To avoid extreme outliers or uncertain values (e.g., whether a blank cell means "0" [zero] serves or student absent), a scale for assessing behavioural data may be used. For example, instead of students manually writing the number of serves into a table, students tick boxes (e.g., fruit (0 serves, 1 serve, 2 serves, etc.); vegetables (0 serves, 1 serve, 2 serves etc.)). To simplify data collection and minimise errors in the recording of data, this could be done technologically using an app (e.g., iPad) or computer at school. This would support more accurate recording of data—but also reduce the data collection burden on students, teachers and LEQ program coordinators.

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8. APPENDICES

Appendix A. Additional pre-survey analysis – Question 7 (How often do you think you eat healthy foods?)

		I don't know	Hardly ever	Some of the time	Most of the time	All of the time	Total	Missing
School A	Count	3	2	6	17	13	41	2
	Percentage	7.0%	4.7%	14.0%	39.5%	30.2%	95.3%	4.7%
School B	Count	6	0	12	51	16	85	2
	Percentage	6.9%	0.0%	13.8%	58.6%	18.4%	97.7%	2.3%
School C	Count	4	2	16	31	3	56	1
	Percentage	7.0%	3.5%	28.1%	54.4%	5.3%	98.2%	1.8%
School D	Count	1	0	3	4	3	11	1
	Percentage	8.3%	0.0%	25.0%	33.3%	25.0%	91.7%	8.3%
School E	Count	2	0	4	6	6	18	1
	Percentage	10.5%	0.0%	21.1%	31.6%	31.6%	94.7%	5.3%
School F	Count	0	0	4	7	2	13	0
	Percentage	0.0%	0.0%	30.8%	53.8%	15.4%	100.0%	0.0%
School G	Count	1	3	12	39	9	64	3
	Percentage	1.5%	4.5%	17.9%	58.2%	13.4%	95.5%	4.5%
School H	Count	1	0	7	29	2	39	1
	Percentage	2.5%	0.0%	17.5%	72.5%	5.0%	97.5%	2.5%
School I	Count	1	0	2	10	5	18	0
	Percentage	5.6%	0.0%	11.1%	55.6%	27.8%	100.0%	0.0%
School J	Count	12	11	41	48	18	130	4
	Percentage	9.0%	8.2%	30.6%	35.8%	13.4%	97.0%	3.0%
School K	Count	1	0	6	9	5	21	1
	Percentage	4.5%	0.0%	27.3%	40.9%	22.7%	95.5%	4.5%
School L	Count	0	0	2	12	1	15	0
	Percentage	0.0%	0.0%	13.3%	80.0%	6.7%	100.0%	0.0%
School M	Count	3	1	11	19	6	40	0
	Percentage	7.5%	2.5%	27.5%	47.5%	15.0%	100.0%	0.0%
School N	Count	2	0	8	7	2	19	1
	Percentage	10.0%	0.0%	40.0%	35.0%	10.0%	95.0%	5.0%
School O	Count	4	6	15	25	10	60	3
	Percentage	6.3%	9.5%	23.8%	39.7%	15.9%	95.2%	4.8%
School P	Count	6	3	19	35	7	70	0
	Percentage	8.6%	4.3%	27.1%	50.0%	10.0%	100.0%	0.0%
School Q	Count	10	3	17	34	14	78	0
	Percentage	12.8%	3.8%	21.8%	43.6%	17.9%	100.0%	0.0%

		I don't know	Hardly ever	Some of the time	Most of the time	All of the time	Total	Missing
School R	Count	4	3	11	31	6	55	2
	Percentage	7.0%	5.3%	19.3%	54.4%	10.5%	96.5%	3.5%
School S	Count	3	4	14	51	14	86	2
	Percentage	3.4%	4.5%	15.9%	58.0%	15.9%	97.7%	2.3%
Total		64	38	210	465	142	919	24

Appendix B. Chi-Square difference test results – Question 8 (pre-session)

	Whole fruit	Whole veg	Fruit ingr.	Veg ingr.	Fruit and veg ingr.	Other	*n*	Chi-Square	df	*p*
School A	8	3	9	8	3	9	40	9.052	5	0.107
School B	10	4	12	30	2	24	82	12.925	5	**0.024**
School C	26	7	7	9	-	4	53	20.006	4	**0.000**
School D	1	-	-	5	1	4	11	4.817	3	0.186
School E	11	1	1	4	-	2	19	8.654	4	0.070
School F	-	2	2	9	-	-	13	1.767	2	0.413
School G	20	7	4	17	-	17	65	6.044	4	0.196
School H	17	1	3	9	3	7	40	12.174	5	**0.032**
School I	3	2	4	6	-	3	18	3.069	4	0.546
School J	32	1	19	29	3	42	126	10.861	5	0.054
School K	4	1	5	7	-	5	22	2.083	4	0.720
School L	2	3	3	5	-	2	15	7.276	4	0.122
School M	-	-	5	11	-	15	31	1.788	2	0.409
School N	-	2	3	4	-	10	19	3.375	3	0.337
School O	12	2	11	15	-	15	55	2.466	4	0.651
School P	29	4	9	14	1	13	70	6.406	5	0.269
School Q	27	3	10	13	3	14	70	6.613	5	0.251
School R	23	5	12	5	1	7	53	15.304	5	**0.009**
School S	22	11	13	23	-	18	87	6.921	4	0.140

Appendix C. Question 5 school level comparison (post-session)

Q5 Did you learn…? - How the food we eat affects our body?					
School name	Frequency	Percent	Valid Percent	Cumulative Percent	
School A	Yes	36	87.8	87.8	87.8
	No	1	2.4	2.4	90.2
	I don't know	4	9.8	9.8	100
	Total	41	100	100	
School B	Yes	81	95.3	96.4	96.4
	No	1	1.2	1.2	97.6
	I don't know	2	2.4	2.4	100
	Sub-total	84	98.8	100	
	Missing	1	1.2		
	Total	85	100		
School C	Yes	46	80.7	82.1	82.1
	No	6	10.5	10.7	92.9
	I don't know	4	7	7.1	100
	Sub-total	56	98.2	100	
	Missing	1	1.8		
	Total	57	100		
School D	Yes	10	83.3	90.9	90.9
	No	1	8.3	9.1	100
	Sub-total	11	91.7	100	
	Missing	1	8.3		
	Total	12	100		
School E	Yes	20	100	100	100
School F	Yes	13	100	100	100
School G	Yes	64	95.5	97	97
	No	1	1.5	1.5	98.5
	I don't know	1	1.5	1.5	100
	Sub-total	66	98.5	100	
	Missing	1	1.5		
	Total	67	100		
School H	Yes	39	97.5	97.5	97.5
	No	1	2.5	2.5	100
	Total	40	100	100	
School I	Yes	16	88.9	88.9	88.9
	No	1	5.6	5.6	94.4
	I don't know	1	5.6	5.6	100
	Total	18	100	100	
School J	Yes	114	83.8	85.7	85.7
	No	6	4.4	4.5	90.2

Q5 Did you learn…? - How the food we eat affects our body?					
	I don't know	13	9.6	9.8	100
	Sub-total	133	97.8	100	
	Missing	3	2.2		
	Total	136	100		
School K	Yes	19	86.4	86.4	86.4
	I don't know	3	13.6	13.6	100
	Total	22	100	100	
School L	Yes	14	93.3	93.3	93.3
	I don't know	1	6.7	6.7	100
	Total	15	100	100	
School M	Yes	36	90	90	90
	I don't know	4	10	10	100
	Total	40	100	100	
School N	Yes	18	94.7	94.7	94.7
	I don't know	1	5.3	5.3	100
	Total	19	100	100	
School O	Yes	58	90.6	90.6	90.6
	No	3	4.7	4.7	95.3
	I don't know	3	4.7	4.7	100
	Total	64	100	100	
School P	Yes	59	89.4	92.2	92.2
	No	3	4.5	4.7	96.9
	I don't know	2	3	3.1	100
	Sub-total	64	97	100	
	Missing	2	3		
	Total	66	100		
School Q	Yes	66	83.5	83.5	83.5
	No	4	5.1	5.1	88.6
	I don't know	9	11.4	11.4	100
	Total	79	100	100	
School R	Yes	50	87.7	87.7	87.7
	No	1	1.8	1.8	89.5
	I don't know	6	10.5	10.5	100
	Total	57	100	100	
School S	Yes	79	89.8	90.8	90.8
	No	6	6.8	6.9	97.7
	I don't know	2	2.3	2.3	100
	Sub-total	87	98.9	100	
	Missing	1	1.1		
	Total	88	100		

Q5 Did you learn…? - How to tell the difference between everyday and sometimes foods?					
School name		Frequency	Percent	Valid Percent	Cumulative Percent
School A	Yes	37	90.2	92.5	92.5
	No	1	2.4	2.5	95
	I don't know	2	4.9	5	100
	Sub-total	40	97.6	100	
	Missing	1	2.4		
	Total	41	100		
School B	Yes	80	94.1	95.2	95.2
	No	1	1.2	1.2	96.4
	I don't know	3	3.5	3.6	100
	Sub-total	84	98.8	100	
	Missing	1	1.2		
	Total	85	100		
School C	Yes	47	82.5	87	87
	No	6	10.5	11.1	98.1
	I don't know	1	1.8	1.9	100
	Sub-total	54	94.7	100	
	Missing	3	5.3		
	Total	57	100		
School D	Yes	11	91.7	91.7	91.7
	No	1	8.3	8.3	100
	Total	12	100	100	
School E	Yes	19	95	95	95
	I don't know	1	5	5	100
	Total	20	100	100	
School F	Yes	12	92.3	92.3	92.3
	I don't know	1	7.7	7.7	100
	Total	13	100	100	
School G	Yes	55	82.1	84.6	84.6
	No	7	10.4	10.8	95.4
	I don't know	3	4.5	4.6	100
	Sub-total	65	97	100	
	Missing	2	3		
	Total	67	100		
School H	Yes	36	90	90	90
	No	1	2.5	2.5	92.5

Q5 Did you learn…? - How to tell the difference between everyday and sometimes foods?					
	I don't know	3	7.5	7.5	100
	Total	40	100	100	
School I	Yes	15	83.3	83.3	83.3
	No	1	5.6	5.6	88.9
	I don't know	2	11.1	11.1	100
	Total	18	100	100	
School J	Yes	116	85.3	89.2	89.2
	No	4	2.9	3.1	92.3
	I don't know	10	7.4	7.7	100
	Sub-total	130	95.6	100	
	Missing	6	4.4		
	Total	136	100		
School K	Yes	20	90.9	90.9	90.9
	No	2	9.1	9.1	100
	Total	22	100	100	
School L	Yes	15	100	100	100
School M	Yes	33	82.5	84.6	84.6
	No	2	5	5.1	89.7
	I don't know	4	10	10.3	100
	Sub-total	39	97.5	100	
	Missing	1	2.5		
	Total	40	100		
School N	Yes	18	94.7	94.7	94.7
	I don't know	1	5.3	5.3	100
	Total	19	100	100	
School O	Yes	54	84.4	85.7	85.7
	No	5	7.8	7.9	93.7
	I don't know	4	6.3	6.3	100
	Sub-total	63	98.4	100	
	Missing	1	1.6		
	Total	64	100		
School P	Yes	54	81.8	84.4	84.4
	No	6	9.1	9.4	93.8
	I don't know	4	6.1	6.3	100
	Sub-total	64	97	100	
	Missing	2	3		

Q5 Did you learn…? - How to tell the difference between everyday and sometimes foods?					
	Total	66	100		
School Q	Yes	65	82.3	82.3	82.3
	No	2	2.5	2.5	84.8
	I don't know	12	15.2	15.2	100
	Total	79	100	100	
School R	Yes	47	82.5	83.9	83.9
	No	2	3.5	3.6	87.5
	I don't know	7	12.3	12.5	100
	Sub-total	56	98.2	100	
	Missing	1	1.8		
	Total	57	100		
School S	Yes	79	89.8	90.8	90.8
	No	6	6.8	6.9	97.7
	I don't know	2	2.3	2.3	100
	Sub-total	87	98.9	100	
	Missing	1	1.1		
	Total	88	100		

Q5 Did you learn...? - Ways to make healthy food choices?					
School name		Frequency	Percent	Valid Percent	Cumulative Percent
School A	Yes	36	87.8	92.3	92.3
	No	1	2.4	2.6	94.9
	I don't know	2	4.9	5.1	100
	Sub-total	39	95.1	100	
	Missing	2	4.9		
	Total	41	100		
School B	Yes	79	92.9	96.3	96.3
	No	1	1.2	1.2	97.6
	I don't know	2	2.4	2.4	100
	Sub-total	82	96.5	100	
	Missing	3	3.5		
	Total	85	100		
School C	Yes	41	71.9	78.8	78.8
	No	4	7	7.7	86.5
	I don't know	7	12.3	13.5	100

Q5 Did you learn...? - Ways to make healthy food choices?						
	Sub-total		52	91.2	100	
	Missing		5	8.8		
	Total		57	100		
School D	Yes		8	66.7	80	80
	I don't know		2	16.7	20	100
	Sub-total		10	83.3	100	
	Missing		2	16.7		
	Total		12	100		
School E	Yes		20	100	100	100
School F	Yes		11	84.6	84.6	84.6
	No		1	7.7	7.7	92.3
	I don't know		1	7.7	7.7	100
	Total		13	100	100	
School G	Yes		54	80.6	83.1	83.1
	No		6	9	9.2	92.3
	I don't know		5	7.5	7.7	100
	Sub-total		65	97	100	
	Missing		2	3		
	Total		67	100		
School H	Yes		40	100	100	100
School I	Yes		15	83.3	83.3	83.3
	No		2	11.1	11.1	94.4
	I don't know		1	5.6	5.6	100
	Total		18	100	100	
School J	Yes	Missing		72.8	81.8	81.8
	No		2	1.5	1.7	83.5
	I don't know		20	14.7	16.5	100
	Sub-total		121	89	100	
	Missing		15	11		
	Total		136	100		
School K	Yes		19	86.4	90.5	90.5
	I don't know		2	9.1	9.5	100
	Sub-total		21	95.5	100	
	Missing		1	4.5		
	Total		22	100		
School L	Yes		15	100	100	100
School M	Yes		34	85	85	85

Q5 Did you learn...? - Ways to make healthy food choices?					
	No	2	5	5	90
	I don't know	4	10	10	100
	Total	40	100	100	
School N	Yes	18	94.7	94.7	94.7
	I don't know	1	5.3	5.3	100
	Total	19	100	100	
School O	Yes	58	90.6	93.5	93.5
	No	2	3.1	3.2	96.8
	I don't know	2	3.1	3.2	100
	Sub-total	62	96.9	100	
	Missing	2	3.1		
	Total	64	100		
School P	Yes	56	84.8	87.5	87.5
	No	3	4.5	4.7	92.2
	I don't know	5	7.6	7.8	100
	Sub-total	64	97	100	
	Missing	2	3		
	Total	66	100		
School Q	Yes	68	86.1	87.2	87.2
	No	1	1.3	1.3	88.5
	I don't know	9	11.4	11.5	100
	Sub-total	78	98.7	100	
	Missing	1	1.3		
	Total	79	100		
School R	Yes	48	84.2	87.3	87.3
	I don't know	7	12.3	12.7	100
	Sub-total	55	96.5	100	
	Missing	2	3.5		
	Total	57	100		
School S	Yes	76	86.4	89.4	89.4
	No	7	8	8.2	97.6
	I don't know	2	2.3	2.4	100
	Sub-total	85	96.6	100	
	Missing	3	3.4		
	Total	88	100		

Appendix D. Chi-Square difference test results – Question 8 (post-session)

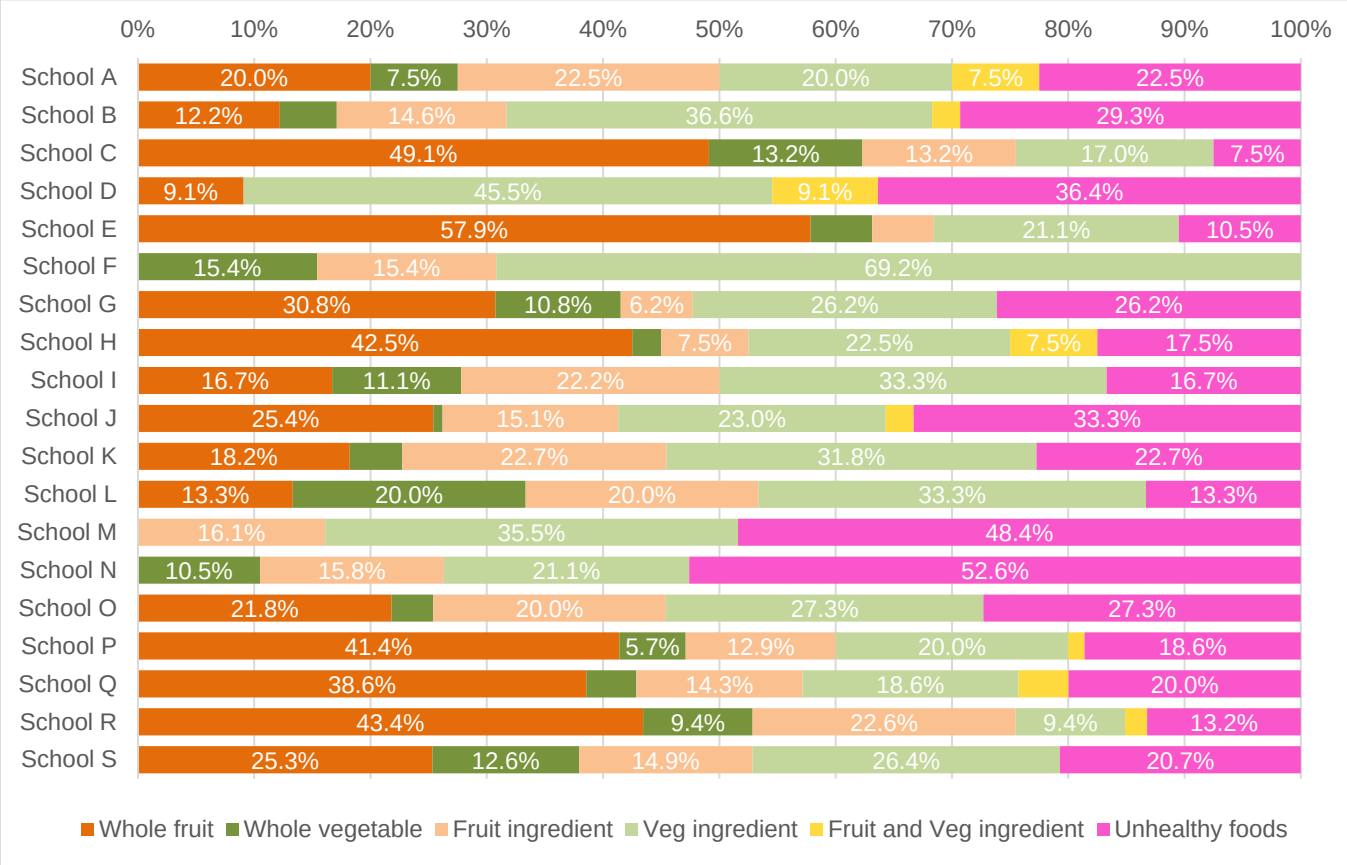
	Whole fruit	Whole vegetable	Fruit ingredient	Veg ingredient	Fruit and Veg ingredient	Other	n	Chi-Square	df	p
School A	1	-	-	17	20	1	39	1.933	3	0.586
School B	-	-	-	32	48	2	82	1.111	2	0.574
School C	1	3	-	27	19	1	51	12.114	4	**0.017**
School D	-	1	-	7	4	-	12	4.166	2	0.125
School E	-	2	-	10	8	-	20	5.299	2	0.071
School F	1	1	2	6	2	-	12	18.248	4	**0.001**
School G	-	3	-	22	37	1	63	1.555	3	0.670
School H	3	-	-	18	18	-	39	3.62	2	0.164
School I	-	3	1	7	2	2	15	159.599	4	**0.000**
School J	7	6	3	34	67	4	121	3.375	5	0.642
School K	-	2	2	7	9	2	22	106.454	4	**0.000**
School L	-	-	-	1	11	2	14	7.003	2	**0.030**
School M	1	3	1	11	15	6	37	18.736	5	**0.002**
School N	-	-	-	1	17	-	18	7.548	1	**0.006**
School O	4	1	3	17	33	3	61	4.434	5	0.489
School P	7	-	1	17	34	4	63	9.056	4	**0.060**
School Q	4	-	2	11	50	1	68	11.149	4	**0.025**
School R	2	-	-	8	37	4	51	8.405	3	**0.038**
School S	2	2	4	23	48	2	81	5.118	5	0.402

Appendix E. Frequency table – Question 7 – Pre-survey

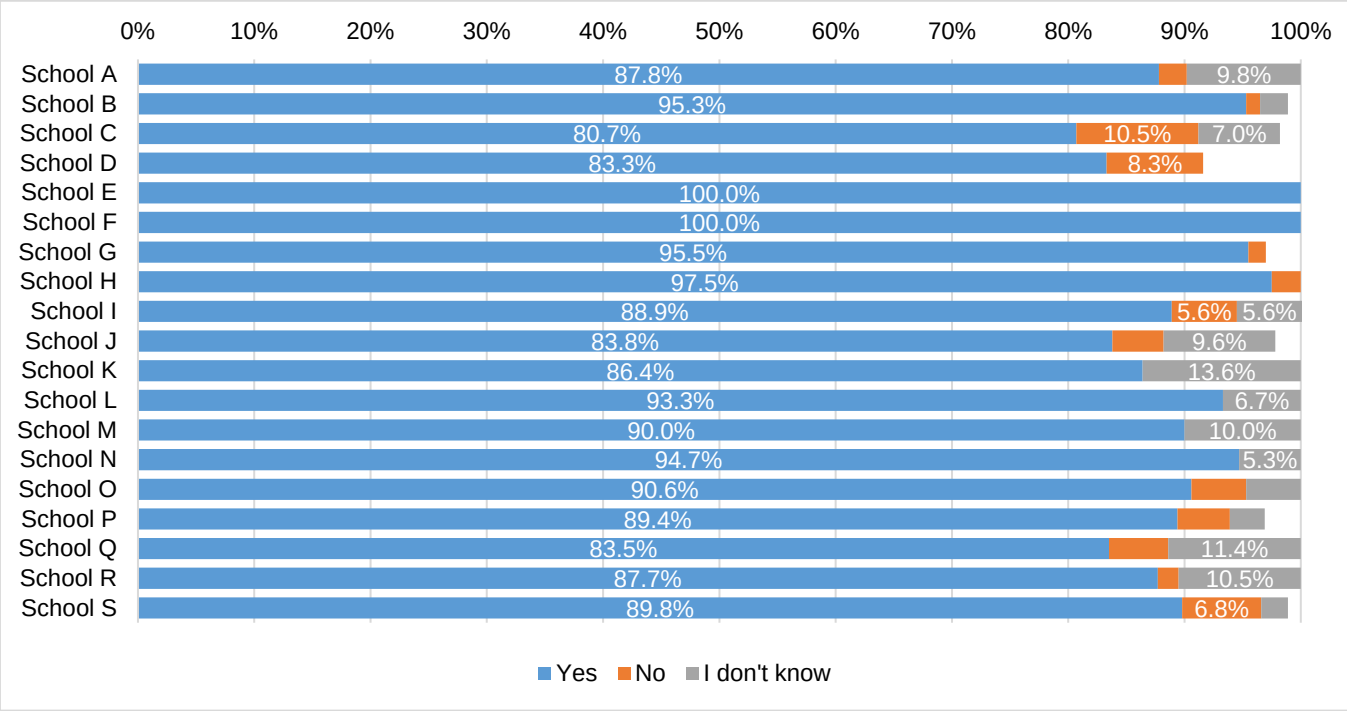
	I don't know	Hardly ever	Some of the time	Most of the time	All of the time	Total	Missing
School A	3	2	6	17	13	41	2
	7.0%	4.7%	14.0%	39.5%	30.2%	95.3%	4.7%
School B	6	0	12	51	16	85	2
	6.9%	0.0%	13.8%	58.6%	18.4%	97.7%	2.3%
School C	4	2	16	31	3	56	1
	7.0%	3.5%	28.1%	54.4%	5.3%	98.2%	1.8%
School D	1	0	3	4	3	11	1
	8.3%	0.0%	25.0%	33.3%	25.0%	91.7%	8.3%
School E	2	0	4	6	6	18	1
	10.5%	0.0%	21.1%	31.6%	31.6%	94.7%	5.3%
School F	0	0	4	7	2	13	0
	0.0%	0.0%	30.8%	53.8%	15.4%	100.0%	0.0%
School G	1	3	12	39	9	64	3
	1.5%	4.5%	17.9%	58.2%	13.4%	95.5%	4.5%
School H	1	0	7	29	2	39	1
	2.5%	0.0%	17.5%	72.5%	5.0%	97.5%	2.5%
School I	1	0	2	10	5	18	0
	5.6%	0.0%	11.1%	55.6%	27.8%	100.0%	0.0%
School J	12	11	41	48	18	130	4
	9.0%	8.2%	30.6%	35.8%	13.4%	97.0%	3.0%
School K	1	0	6	9	5	21	1
	4.5%	0.0%	27.3%	40.9%	22.7%	95.5%	4.5%
School L	0	0	2	12	1	15	0
	0.0%	0.0%	13.3%	80.0%	6.7%	100.0%	0.0%
School M	3	1	11	19	6	40	0
	7.5%	2.5%	27.5%	47.5%	15.0%	100.0%	0.0%
School N	2	0	8	7	2	19	1
	10.0%	0.0%	40.0%	35.0%	10.0%	95.0%	5.0%
School O	4	6	15	25	10	60	3
	6.3%	9.5%	23.8%	39.7%	15.9%	95.2%	4.8%
School P	6	3	19	35	7	70	0
	8.6%	4.3%	27.1%	50.0%	10.0%	100.0%	0.0%
School Q	10	3	17	34	14	78	0
	12.8%	3.8%	21.8%	43.6%	17.9%	100.0%	0.0%
School R	4	3	11	31	6	55	2
	7.0%	5.3%	19.3%	54.4%	10.5%	96.5%	3.5%
School S	3	4	14	51	14	86	2
	3.4%	4.5%	15.9%	58.0%	15.9%	97.7%	2.3%

	I don't know	Hardly ever	Some of the time	Most of the time	All of the time	Total	Missing
Total	64	38	210	465	142	919	24

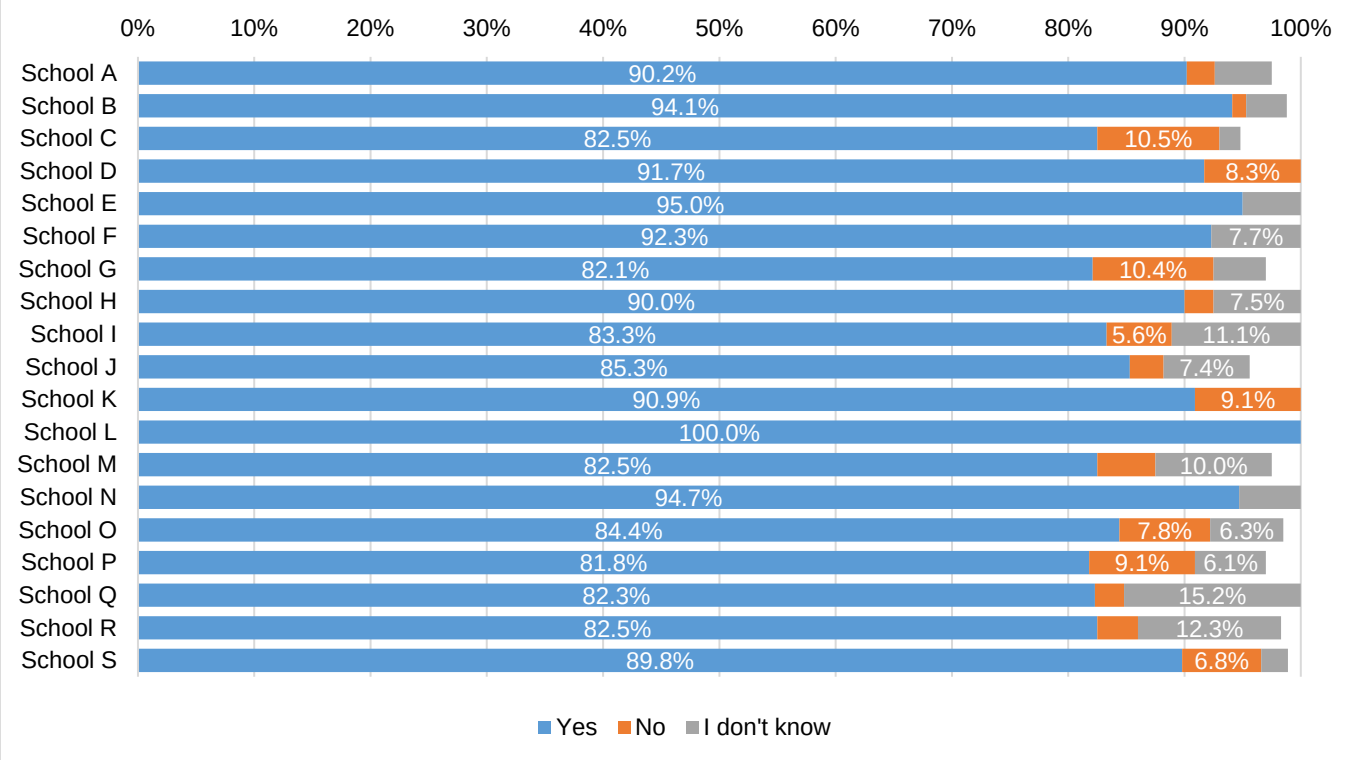
Appendix F. Additional pre-survey analysis – Question 8 – school level comparison



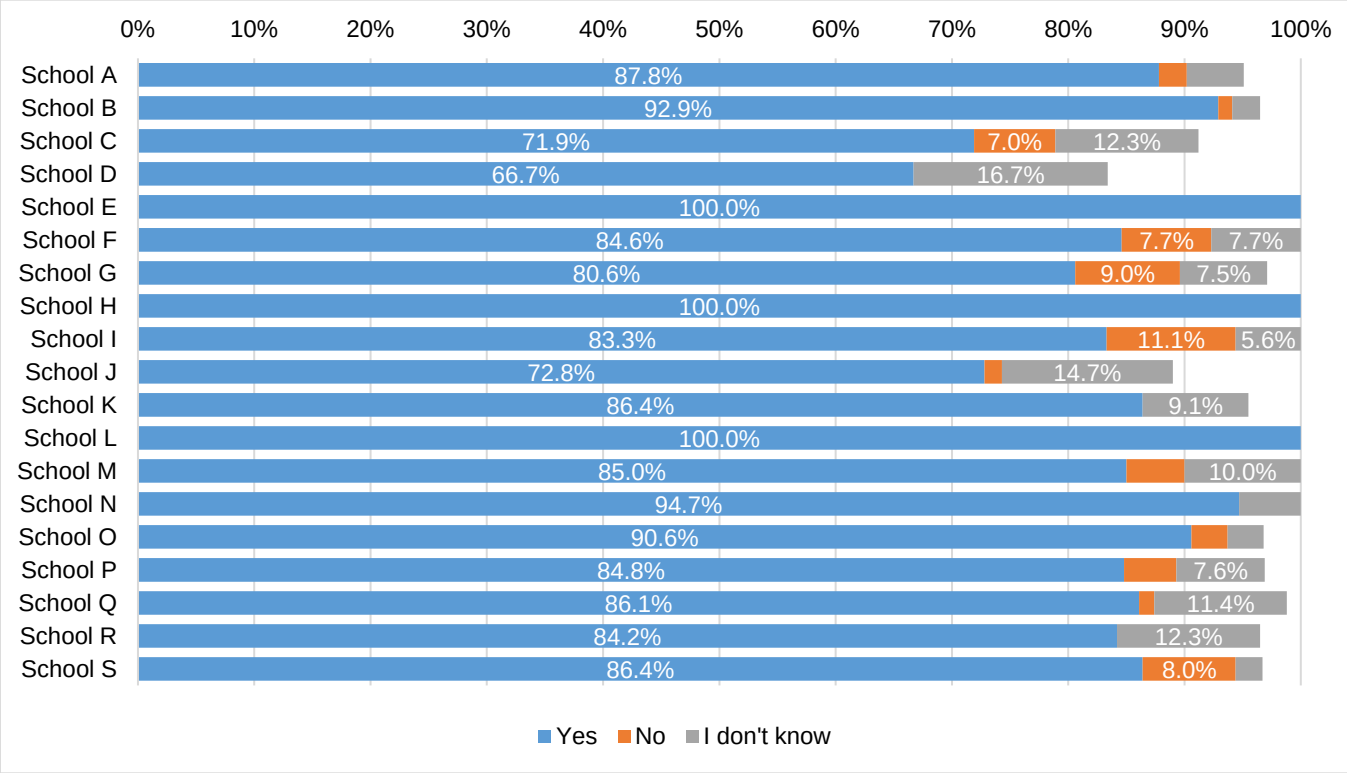
Appendix G. Additional post-survey analysis – Question 5.1 (*How food affects our body*) – school level comparison



Appendix H. Additional post-survey analysis – Question 5.2 (*Differences between every day and sometimes foods*) – school level comparison



Appendix I. Additional post-survey analysis – Question 5.3 (*Ways to make healthy food choices*) – school level comparison



Appendix J. Sample Food and Drink Policy developed by one participating school

Published: June 2021 **Date of next review:** June 2022

INTRODUCTION AND AIM

Our school actively promotes an environment which encourages and supports healthy eating and drinking behaviours. This policy document was produced in consultation with the whole school community, including; Principal, teachers and other school staff, parents (P&C committee) and our tuckshop team.

Aim: To develop and communicate a united, whole school approach toward healthy food and drink choices, that supports and promotes the health and well-being of our school community members.

Relevant Legislation

- *Food Act 2006*
- *Food Regulation 2016*
- *Australia New Zealand Food Standards Code*
- *Work Health and Safety Act 2011*
- *Fair Work Act 2009*
- *Education and Care Services National Law Act 2010*
- *Commission for Children and Young People and Child Guardian Act 2000*
- *Working with Children (Risk Management and Screening) Act 2000*

Supporting documents and resources:

- *Australian Dietary Guidelines 2013.* Available at www.eatforhealth.gov.au
- *National Healthy School Canteens: Guidelines for healthy foods and drinks supplied in school canteens (National Healthy School Canteen Guidelines) 2014.* Available at https://www1.health.gov.au/internet/main/publishing.nsf/Content/5FFB6A30ECEE9321CA257BF0001DAB17/$File/Canteen%20guidelines.pdf
- *The Smart Choices - Healthy Food and Drink Supply Strategy for Queensland Schools.* Available at https://education.qld.gov.au/student/Documents/smart-choices-strategy.pdf
- *The Healthy Eats program – Life Education Queensland.* Resources available at www.healthyeatskids.com.au

PURPOSE AND RATIONALE

Our school recognises that childhood is a critical time when attitudes and preferences relating to food and eating behaviours are formed. Once a child begins school, the school community plays a significant role in influencing children's food preferences, which evidence suggests, are likely to continue into adulthood.

Our school is committed to developing the spiritual, physical, emotional and intellectual welfare of its students. As a **HEALTHY EATS** school, we are proud to promote and model healthy eating and good nutrition in our school programs, classrooms, school events and in our school tuckshop. This reinforces the nutrition education that is taught as part of the *Australian Curriculum* and contributes to the health and wellbeing of the school community.

This **Healthy Eats School Food & Drink Policy** has been adapted from the *ACT Public School Food and Drink Policy* and provides a framework to promote a consistent, whole school approach, to encouraging and supporting healthy food and drink choices in line with the Australian Dietary Guidelines.

We recognise that The *Australian Dietary Guidelines* use the best available scientific evidence, to provide information to our students and school community, on the types and amounts of foods and drinks that; promote health and wellbeing, reduce the risk of diet-related conditions, and reduce the risk of chronic disease.

The *National Healthy School Canteen Guidelines (also described by The Smart Choices - Healthy Food and Drink Supply Strategy for Queensland Schools)* are consistent with the types and amounts of foods and drinks recommended for children and young people in the *Australian Dietary Guidelines.* These guidelines use a traffic light system to categorise foods and drinks according to their nutritional value and levels of energy, fibre, saturated fat, sugar and salt.

GUIDELINES

Wider School Environment

- The Principal is responsible for ensuring that the *National Healthy School Canteen Guidelines* (as described by *The Smart Choices - Healthy Food and Drink Supply Strategy for Queensland Schools)* are applied to the sale of food and drinks in school canteens and to all school activities and events. These guidelines use a traffic light system to categorise food and drinks according to their nutritional value and levels of; energy, saturated fat, fibre, sugar and salt. The Traffic Light System is as follows:

GREEN food and drinks are the best choices. They should always be available, displayed in prominent areas, and actively promoted and encouraged. **GREEN** foods and drinks form the basis of a healthy diet. **GREEN** foods and drinks offer a wide range of nutrients and are generally low in saturated fat, sugar and salt.

AMBER foods and drinks should be selected carefully. They should not dominate the food and drink choices displayed or promoted. **AMBER** foods and drinks contribute some valuable nutrients, but may contain higher amounts of saturated fat, sugar and/or salt and may be low in fibre. **AMBER** food and drinks may contribute to excess intake of energy (kilojoules/calories) if consumed in large quantities.

RED foods and drinks should not be provided or sold in schools. **RED** foods and drinks are low in nutritional value and fibre and may be high in saturated fat, added sugar and/or salt. **RED** foods and drinks may also provide excess energy (kilojoules/calories).

- Our School commits to undertaking the **Healthy Eats School Checklist** (including Classroom and School Tuckshop checklists) every 6 months, and a review of our **School Food and Drink Policy** every year.

- **RED** sugary drinks, are not permitted to be sold in our school tuckshop.

- Food and drink vending machines are not permitted on our school site.

- The following exemptions may be made by the Principal for:
  - Food and drinks sold at **occasional fetes, fundraisers and school events** no more than twice per term although **GREEN** alternatives are encouraged.
  - Food and drinks supplied **from home**, including birthday cakes.
  - Curriculum-related **cooking and food-technology courses** (schools are strongly encouraged to incorporate **GREEN** foods in line *The Smart Choices Strategy for Queensland Schools*, when making curriculum decisions with regard to cooking and food-technology).

- Camps, sports carnivals, excursions: Our school will endeavour to apply the *The Smart Choices - Strategy for Queensland Schools* (including the *traffic light system)* when foods and drinks are provided to students participating in **off-site school activities**, such as **excursions** or **school sports carnivals**. We will endeavour to communicate our school food and drink policy to any external organisations we work with in this space.

- Inclusive food environment: The Principal is responsible for ensuring that religious and cultural practices are considered where foods and drinks are provided at school events and activities.

- Food allergies: The Principal is responsible for meeting the requirements of relevant policies to ensure that food allergies, intolerances and medical conditions (such as anaphylaxis) are managed where foods and drinks are provided at school events and activities. For more information regarding anaphylaxis see: https://education.qld.gov.au/student/Documents/anaphylaxis-guidelines-for-queensland-state-schools.pdf

Classroom and Learning Environment

- Food rewards: The Principal and classroom teaching staff are responsible for ensuring that **RED** category food and drink items are not used as rewards or incentives for student learning.

- Role Modelling: We recognise that the actions and behaviour of our staff influence the choices made by our students. Our school staff are expected to be positive role models in relation to the food they consume whilst at school. We strongly encourage our staff to support this Policy by not consuming **RED** category foods and drinks in view of students (including during yard duty and food breaks).

- Classroom and school yard environment: We recognise that the environment which we share with our peers and colleagues, influences the choices and associations we make toward our food and drink. We commit to developing a classroom and school yard environment that supports and encourages healthy food and drink choices in a positive atmosphere. This includes; teaching materials and lesson plans, posters, the space in which we eat.

School Food Programs

- Any school food programs (such as Breakfast Club, Brain break etc) will be self-reviewed each 6 months, (as part of the **Healthy Eats Program**), so that all available food and drink aligns with the recommendations of *The Smart Choices - Healthy Food and Drink Supply Strategy for Queensland Schools*

School Tuckshop

- The Principal and tuckshop convenor are required to ensure appropriate agreements are in place for any school food service/tuckshop. As part of the Agreement:
    - School tuckshops may be subject to the requirements of the *Food Act 2006* (QLD), *Food Regulation ACT 2016* (QLD) and *Australia New Zealand Food Standards Code*. These may include inspection and reporting requirements, where relevant.
    - The Principal and tuckshop operators must meet their responsibilities under the *Work Health and Safety Act 2011(QLD)*, the *Working with Children (Risk Management and Screening) Act 2000* and the *Fair Work Act 2009*.
    - The school tuckshop will undertake an annual tuckshop self-review, as well as a menu audit by an external agency (such as the **Healthy Eats program** by **Life Education Queensland** and **QAST** (Queensland Association of School Tuckshops)), to assess the tuckshop environment and food and drinks provided for sale against the *National Healthy School Canteen Guidelines (as described by The Smart Choices - Healthy Food and Drink Supply Strategy for Queensland Schools)*.

Parent communication and support

- Our school will promote healthy food and drink behaviours to our parents and families, and will provide support and appropriate information/ resources where required.
- Our school tuckshop, [redacted] menu is Smart Choices colour coded, with 90% of menu items coded green and 10% coded amber.

Accessing professional guidance

- Our school is committed to accessing professional advice from external organisations (such as the **Healthy Eats** program **by Life Education Queensland,** and Healthcare Professionals in our local community), to support us in the implementation of our Food and Drink Policy.

MONITORING AND EVALUATION

- The Principal is responsible for monitoring the implementation of this Policy which includes an annual review.

DEFINITIONS AND MORE INFORMATION

Australian Dietary Guidelines 2013: provides advice about the amounts and kinds of foods required to maintain health and wellbeing. For more information see:
https://www.eatforhealth.gov.au/guidelines

National Healthy School Canteens: Guidelines for healthy foods and drinks supplied in school canteens 2014: have been designed for use in school canteens, and provide useful guidance for other school activities where foods and drinks are provided or sold. This policy applies the Guidelines to all school activities. These guidelines are reinforced at a state level by *The Smart Choices - Healthy Food and Drink Supply Strategy for Queensland Schools*. For more information see:
https://www1.health.gov.au/internet/main/publishing.nsf/Content/5FFB6A30ECEE9321CA257BF0001DAB17/$File/Canteen%20guidelines.pdf and
https://education.qld.gov.au/student/Documents/smart-choices-strategy.pdf

School Tuckshop: is a food service provider that supplies foods and drinks for sale to a school population, primarily on the school premises during school hours.

Traffic Light System: The *National Healthy School Canteens: Guidelines for healthy foods and drinks supplied in school canteens* uses a Traffic Light System to categorise foods and drinks as GREEN, AMBER or RED depending on their nutritional value and levels of saturated fat, sugar and salt. (see above in 'Guidelines').

LEGISLATION

Australia New Zealand Food Standards Code

The Australia New Zealand Food Standards Code provides standards to ensure food in Australia and New Zealand is safe and suitable for human consumption. It includes standards for food additives, food safety, labelling and foods that need pre-approval such as genetically modified (GM) foods. For more information see:
http://www.foodstandards.gov.au/code/Pages/default.aspx

Commission for Children and Young People and Child Guardian ACT 2000

Acts to promote and protect the rights, interests and wellbeing of children and young people in Queensland.

- Recognises their right to an environment that protects them from harm and promotes their wellbeing
- Takes into account the responsibilities of parents, families, the community and the whole of government
- Ensures that children and young people are provided with a safe and nurturing environment by organisations and people who, directly or indirectly, provide for their wellbeing, care and protection.
- For further information on the ACT see:
  https://www.legislation.qld.gov.au/view/pdf/2004-09-01/act-2000-060

Fair Work Act 2009

The Fair Work Act 2009 is the key piece of Commonwealth legislation regulating employment and workplace relations. It provides for terms and conditions of employment and sets out the rights and responsibilities of employees, employers and employee

organisations. For more information see: https://www.alrc.gov.au/publication/family-violence-and-commonwealth-laws-dp-76/16-employment-the-fair-work-act-2009-cth/overview-of-the-fair-work-act-2009-cth/

Food Act 2006* (QLD) and the *Food Regulation 2016

Regulate the sale of food for human consumption, and for other purposes. It's purpose includes:

- ensuring food for sale is safe and suitable for consumption
- preventing misleading conduct in relation to the sale of food
- adopting the *Australia New Zealand Food Standards Code*.

Although the *Food Act 2006* is relevant for the services provided by school tuckshops, details of licencing and legislation exemptions can be found on the Queensland Health website at https://www.health.qld.gov.au/public-health/industry-environment/food-safety/licensing/licensable-businesses or by contacting your local council Environmental Officer.

Work Health and Safety Act 2011 (ACT)

Provides a framework to protect the health, safety and welfare of all workers at work. It also protects the health and safety of all other people who might be affected by the work. All workers are protected by the WHS Act, including: employees, contractors, subcontractors, outworkers, apprentices and trainees, work experience students, volunteers, employers who perform work. For more information see https://www.worksafe.qld.gov.au/laws-and-compliance/workplace-health-and-safety-laws/laws-and-legislation/work-health-and-safety-act-2011

Working with Children (Risk Management and Screening) ACT 2000

Queensland legislation protecting the wellbeing of children by promoting the implementation of risk management strategies and screening of persons employed or working in an environment where the safety and well-being of children is a particular priority. For more information visit: https://www.legislation.qld.gov.au/view/pdf/inforce/current/act-2000-060

COMPLAINTS

Where there are concerns regarding the application of the Policy or the Policy itself, contact should be made with the Principal.

SUPPORT

For support in relation to this policy please contact the **Healthy Eats Team** at **Life Education Queensland** by email healthyeats@lifeeducation.org.au or 07 5572 0166.
Please see the Life Education Hub at lifeeducationhub.com.au for:

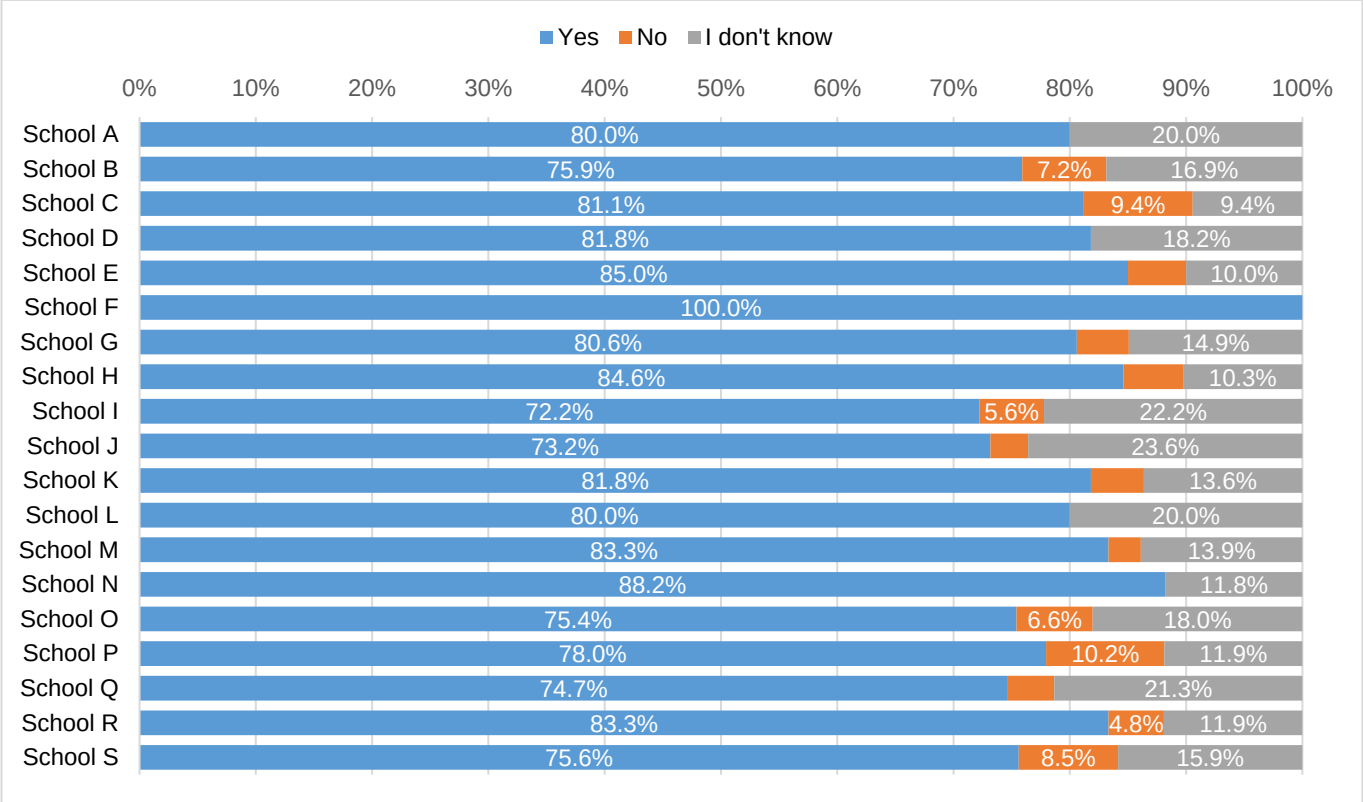
- School Tuckshop assistance and resources
- School Food Garden resources
- School Breakfast Club resources
- Classroom Brain Break resources
- Healthy Eats School Newsletter Tips
- Curriculum aligned Nutrition Lesson Plans
- Fruit and Vegetable Passport Classroom Challenge

RELATED SCHOOL POLICIES

1. **Smart Choices**: Healthy Food and Drink Supply Strategy for Queensland Schools (v1.4 Juanuary 2020)
   https://education.qld.gov.au/student/Documents/smart-choices-strategy.pdf

*** This policy has been adapted from the ACT Public School Food and Drink Policy (2015), with permission from the ACT Education Directorate***

Appendix K - Additional post-survey analysis – Question 8 – school level comparison



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Thank you for your valuable contributions throughout the project.

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