



# Culture Health Communities Activity Challenge Evaluation

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# Acknowledgements

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# Executive summary

## Introduction

The Culture Health Communities (CHC) Activity Challenge is a pedometer program that aims to encourage regular physical activity in primary school students. In Term 2 of 2014 the 8-week program was piloted in nine schools. In total, 15 year five and six classes comprising of 318 students participated in the Challenge.

The Activity Challenge was implemented by the NSW Agency for Clinical Innovation in partnership with NSW Rugby League and the NSW Department of Education and Communities. The Challenge is part of the Culture Health Communities (CHC) strategy.

## Evaluation approach

In order to assess the effectiveness of the pilot CHC Activity Challenge, the Ministry of Health commissioned CIRCA to undertake an evaluation of the pilot program. The evaluation aimed to answer three key questions:

1. What was the impact of the program on physical activity levels of students?
2. What were the other benefits of the program at the individual, school, and community level?
3. Was the program implemented in participating schools as intended?

A mixed methods evaluation of process and impact was undertaken. The evaluation included five components: a physical activity log (data collected as part of the program) (n=274, response rate 86%), a pre and post student physical activity survey (n=209, response rate 66%), qualitative interviews with teachers (n=11) and program implementation staff (n=3), and classroom discussions with 10 classes and a review of program documentation.

Physical activity log data included daily individual pedometer readings and self-reported time spent in moderate-vigorous physical activity. Missing data meant that data for time spent in physical activity is difficult to interpret with certainty. The pre-post survey included the Physical Activity Questionnaire for Older Children (PAQ-C) in order to calculate levels of physical activity among the students (Kowalski, et al., 2004), and a question on sedentary behaviour from the NSW Schools Physical Activity and Nutrition Survey (SPANS) 2010 (Hardy, et al., 2011).



## Key program outputs

Participating schools were located in a mix of major cities (1 school, 41 students), inner regional areas (4 schools, 147 students), outer regional areas (2 schools, 78 students) and remote areas (2 schools, 56 students). Monetary prizes were awarded to first (\$3,000 prize), second (\$1,500 prize) and third place (\$750 prize).

An equal number of boys and girls participated in the Challenge. The average age of students was 11 years. Most students were Aboriginal and/or Torres Strait Islander (56.6%).

## Results

The results in relation to each of the three research questions are shown in the tables below.

Question 1: What was the impact of the program on physical activity levels of students?	
Evaluation questions	Results
<p><b>Question</b> Has the program decreased sedentary activity levels of participating students?</p>	<p><b>Sedentary activity decreased for weekend days but not weekdays:</b></p> <ul style="list-style-type: none"> <li>– Average daily screen time on a usual weekday was the same before and after the Challenge (2.5 hours/day)</li> <li>– Average daily screen time on a usual weekend day decreased from 3.2 hours before the Challenge to 2.7 hours after the Challenge (significant at <math>p &lt; 0.05</math>)</li> <li>– The proportion of students spending four or more hours on screen time on a usual day decreased from 35% pre-Challenge to 26% post-Challenge (significant at <math>p &lt; 0.05</math>)</li> <li>– The proportion of students meeting screen time guidelines of no more than two hours of screen time on a usual day before and after the Challenge was the same (50% and 49% respectively).</li> </ul>
<p><b>Question</b> Has the program increased physical activity levels of students?</p>	<p><b>There was a very slight increase in PAQ-C scores:</b></p> <ul style="list-style-type: none"> <li>– The mean PAQ-C score increased slightly from 3.2 pre-Challenge to 3.3 post-Challenge (significant at <math>p &lt; 0.05</math>)</li> <li>– Initial PAQ-C scores were higher among boys than girls. There was no significant change among boys, however, scores among girls increased very slightly from 3.1 to 3.3 (significant at <math>p &lt; 0.05</math>)</li> <li>– Initial PAQ-C scores were higher among Aboriginal and/or Torres Strait Islander students compared to non-Aboriginal students. There was no significant change for Aboriginal and/or Torres Strait Islander students. For non-Aboriginal students scores increased very slightly from 3.0 to 3.2 (significant at <math>p &lt; 0.05</math>).</li> </ul> <p><b>Average daily steps were consistent for most of the Challenge with an increase in the last 2 weeks:</b></p> <ul style="list-style-type: none"> <li>– Individual average daily steps were fairly consistent across the weeks of the Challenge, except for the last two weeks where there was an increase.</li> </ul>

**The proportion of students averaging 8,000 or more daily steps increased from baseline, except in Weeks 3 and 4:**

- The proportion of students averaging 8,000 or more steps at baseline was 51%. During the Challenge this increased to 63% in Week 1 to 68% in Week 8, with a dip to around 50% in Weeks 3 and 4
- For every day of the Challenge the median daily minutes of vigorous physical activity was 40 to 60 minutes. Data for time spent in moderate-vigorous physical activity is not generalisable to all Challenge participants given the extent of missing data.

**Question 2: What were the other benefits of the program at the individual, school, and community level?**

Evaluation questions	Results
<p>Has the program increased students' engagement in classroom activities and school life?</p> <p>Are there other positive or negative impacts of the program at the individual, school or community level?</p>	<ul style="list-style-type: none"> <li>- Teachers reported that student engagement had increased. This included increased attendance, improved behaviour, and improved social interaction and teamwork.</li> <li>- Teachers utilised opportunities to integrate the Challenge into lesson plans, including PDHPE, HSIE and mathematics lessons.</li> <li>- No negative impacts on students or communities were noted.</li> </ul>
<p>Has the program increased students' and schools' engagement with the community?</p>	<ul style="list-style-type: none"> <li>- Benefits extended to school communities. Other students and teachers were interested in the Challenge, with some teachers becoming more active both individually and with their classes.</li> <li>- There was limited feedback in relation to the benefits of the Challenge for families and on a broader community level.</li> </ul>

**Question 3: Was the program implemented as intended in participating schools?**

Evaluation questions	Results
<p>Implemented as intended</p>	<ul style="list-style-type: none"> <li>- The program was largely implemented as intended, with teachers being given the scope to tailor implementation to their classroom contexts.</li> </ul>
<p>Satisfaction</p>	<ul style="list-style-type: none"> <li>- All those involved in the program expressed satisfaction with the Challenge and a willingness to be involved again.</li> </ul>
<p>Support arrangements</p>	<ul style="list-style-type: none"> <li>- Support provided by the program implementation team was seen to be effective.</li> </ul>
<p>Key components</p>	<ul style="list-style-type: none"> <li>- The competitive nature of the program was identified as a key motivating factor for students and a facilitator to their involvement. This was particularly the case in schools where there was more than one class as they could compete against each other.</li> </ul>
<p>Family and community engagement</p>	<ul style="list-style-type: none"> <li>- Feedback suggests that there was limited engagement by families and communities engaged with the program, however, the extent to which families and communities engaged was unclear from the evaluation.</li> </ul>

Meeting expectations	<ul style="list-style-type: none"> <li>– Qualitative feedback indicates the program was felt to meet or exceed the expectations of the program implementation team and teachers.</li> </ul>
Proportion of eligible schools and students participating	<ul style="list-style-type: none"> <li>– Twenty-five schools were invited to participate in the Activity Challenge, with nine schools participating (36%).</li> <li>– All students were given parental/carer permission to participate in the Challenge and in the Challenge evaluation.</li> </ul>
Factors influencing uptake	<ul style="list-style-type: none"> <li>– The uptake of the program does not seem to have varied by factors such as the proportion of students who identify as Aboriginal and/or Torres Strait Islander or location.</li> </ul>

## Considerations

Overall the implementation of the Pilot Culture Health Communities Activity Challenge was very successful. Key considerations emerged from the evaluation in order to both continue and further build on this success for future implementation. These included the following key points:

- In order to enhance competition as a key motivator encourage participation from multiple classes in each school and continue prize based rewards
- Retain the leader board on the online platform, however, consider removing the average daily steps so classes are not able to calculate how much is needed to overtake other classes
- Encourage teachers to allow students to pick up their pedometers as soon as they arrive at school. Suggestions to be included in Challenge kits provided to teachers such as keeping pedometers in a central location (e.g. on hooks or in a bucket outside classrooms) or leaving pedometers with teachers on morning duty to distribute to students
- Source more robust pedometers to limit breakage and resetting during the day. Source pedometers that are less sensitive to other movement such as being swung or shaken
- Explore opportunities to further integrate the Activity Challenge with the NSW Knockout Health Challenge and Premier’s Sporting Challenge
- Continue the level of support provided to teachers by the program implementation team, including class visits and the provision of t-shirts and pedometers
- Include female tour guides such as female rugby league players, or other sporting role models through other potential partners such as the W League and Netball Australia
- Ensure the iPad App version of the online platform works effectively, and improve the capacity of the online platform to load smoothly on slower internet connections.

## Conclusion

Results from this evaluation indicate that the Culture Health Communities Activity Challenge had a positive impact on the physical activity of students during the Challenge period. Teachers also reported that the Challenge was a great opportunity to motivate students to become more physically active. Further, doing more physical activities, becoming fit and feeling healthier were identified by the students themselves as some of the things they liked best about the Challenge.

Teachers and program implementation staff also noted unintended benefits of the Challenge in relation to improved attendance and behaviour, facilitating positive social behaviour by promoting teamwork and encouraging student relationships, and enhancing learning opportunities through the integration of the Activity Challenge into teaching components of the Stage 3 (Years 5 and 6) syllabuses.

The resources already invested into developing program material and the online platform, and the successes of the pilot, provide significant opportunities to continue the Activity Challenge into the future and further increase the number of participating schools and classes.



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# 1. Introduction

## 1.1 Culture Health Communities Activity Challenge

The Culture Health Communities (CHC) Activity Challenge is a pedometer program that aims to encourage regular physical activity in primary school students. In Term 2 of 2014 the 8-week program was piloted in nine schools across NSW, with students in years five and six. In total, 15 classes participated in the program.

The Activity Challenge was implemented by the NSW Agency for Clinical Innovation in partnership with NSW Rugby League and the NSW Department of Education and Communities. The program is part of the broader Culture Health Communities (CHC) strategy promoting healthy lifestyles among Aboriginal and/or Torres Strait Islander people living in NSW. The purpose statement of the CHC strategy is:

*Bringing together culture and communities to improve the health and well-being of Aboriginal people.*

Schools located in towns participating in previous CHC Knockout Health Challenges, and with high numbers of Aboriginal and/or Torres Strait Islander students were targeted to participate in the Activity Challenge.

### Program aims

The strategic objectives of the Activity Challenge are to:

- Build on the engagement with communities which are participating in the 2014 NSW Knockout Health Challenge
- Support schools not engaged with the Premiers Sporting Challenge to increase students' physical activity
- Develop an Aboriginal-specific physical activity initiative that can benefit all students; and
- Support an increased uptake of the Premiers Sporting Challenge in more remote schools or those with high numbers of Aboriginal students.

The behavioural objectives of the Activity Challenge are to:

- Decrease sedentary activity amongst school-aged children
- Increase children's levels of moderate to vigorous physical activity.

## Program design

The key elements of the program design are outlined below:

- **Pedometers:** Each student is given a pedometer on each school day to record their steps during school hours. Steps are recorded in a guidebook, and this data is entered onto the Activity Challenge website.
- **Online journey:** The online journey takes participants around Australia and the world with NRL players as their guides. NRL players also provide key messages about health and physical activity. Azion Wellness was subcontracted to deliver and manage the online component of the Activity Challenge.
- **Daily class average:** Class teachers or assistants calculate the average daily number of steps for their class and enter this onto the online program. Based on these numbers the class' position on the Activity Challenge course map is updated, moving the class through the locations in the online journey.
- **Individual avatars:** Through the online platform each student can create visual avatars of themselves, and record their daily number of steps and types of vigorous physical activity.
- **Prizes:** Classes were ranked according to their average daily steps throughout the program period. The leader board was displayed and updated live on the online platform so classes could track their placing. At the conclusion of the Challenge, monetary prizes were awarded to first (\$3,000 prize), second (\$1,500 prize) and third place (\$750 prize).

## Program logic model



## 1.2 Evaluation

In order to assess the effectiveness of the pilot CHC Activity Challenge, the Ministry of Health commissioned CIRCA to undertake an evaluation of the program in collaboration with the Centre for Population Health.

### Evaluation aims

The evaluation aimed to answer three key questions:

1. What was the impact of the program on physical activity levels of students?
2. What were the other benefits of the program at the individual, school, and community level?
3. Was the program implemented in participating schools as intended?

### Evaluation design

A mixed methods process and impact evaluation was undertaken, including the following five components.

- **Component 1 - Physical activity data:** Data entered into the online platform was also used for the evaluation. This included both average daily pedometer readings for each class, as well as individual student data on daily pedometer readings and minutes of moderate to vigorous exercise completed. Demographic information of age, gender, school, and Aboriginal status was also collected.
- **Component 2 - Pre-post physical activity survey:** Before and after the Activity Challenge students completed a survey on their levels of physical activity and sedentary behaviour.
- **Component 3 - Qualitative interviews:** Following the completion of the Activity Challenge, semi-structured interviews were conducted with class teachers and any other teaching staff involved in implementing the Activity Challenge, as well as program implementation staff.
- **Component 4 - Classroom discussion:** Following the completion of the Activity Challenge, students' experiences and perceptions of the Challenge were also explored through a 30 minute classroom-based discussion led by an Aboriginal researcher.
- **Component 5 - Program implementation records:** Program documentation was also reviewed to further understand program implementation.

These components are discussed in further detail in the following methodology section.

## 2. Methods

### 2.1 Evaluation questions and data sources

<b>Question 1: What was the impact of the program on physical activity levels of students?</b>	
<b>Evaluation questions</b>	<b>Data source</b>
<ul style="list-style-type: none"> <li>- Has the program decreased sedentary activity levels of participating students?</li> </ul>	Pre-post physical activity survey <ul style="list-style-type: none"> <li>- Self-reported minutes of sedentary activity assessed in week prior to Challenge and final week of Challenge</li> </ul>
<ul style="list-style-type: none"> <li>- Has the program increased physical activity levels of students?</li> </ul>	Pre-post physical activity survey <ul style="list-style-type: none"> <li>- Self-reported levels of moderate to vigorous physical activity assessed in week prior to Challenge and final week of Challenge</li> </ul> Physical activity log <ul style="list-style-type: none"> <li>- Average daily number of steps at baseline and each week of the Challenge (school hours only)</li> <li>- Average daily minutes of moderate-vigorous physical activity at baseline and each week of the Challenge</li> <li>- Proportion of students doing 16,000 or more steps per day at baseline and each week of the Challenge<sup>1</sup></li> <li>- Proportion of students doing at least 60 minutes of moderate-vigorous physical activity each day at baseline and each week of the Challenge<sup>2</sup></li> </ul>
<b>Question 2: What were the other benefits of the program at the individual, school, and community level?</b>	
<b>Evaluation questions</b>	<b>Data source</b>
<ul style="list-style-type: none"> <li>- Has the program increased students' engagement in classroom activities and school life?</li> <li>- Has the program increased students' and schools' engagement with the community?</li> <li>- Are there other positive or negative impacts of the program at the individual, school or community level?</li> </ul>	Interviews with: <ul style="list-style-type: none"> <li>- Aboriginal Education Assistants</li> <li>- Teachers</li> <li>- Program implementation staff</li> </ul> Classroom discussion activity

<sup>1</sup> McCormack GR, Rutherford J, Giles-Corti B, Tudor-Locke C, Bull F. BMI-referenced cut-points for recommended daily pedometer-determined steps in Australian children and adolescents. *Res Q Exerc Sport*. 2011 Jun;82(2):162-7.

<sup>2</sup> Department of Health and Ageing, 2014. Australia's physical activity and sedentary behaviour guidelines: Fact sheet Children (5-12 years), Canberra: Australian Government. Available online [http://www.health.gov.au/internet/main/publishing.nsf/Content/health-pubhlth-strateg-phys-act-guidelines/\\$File/FS-Children-5-12-Years.PDF](http://www.health.gov.au/internet/main/publishing.nsf/Content/health-pubhlth-strateg-phys-act-guidelines/$File/FS-Children-5-12-Years.PDF) Accessed 9 October 2014.

### Question 3: Was the program implemented as intended in participating schools?

Evaluation questions	Data source
<p><b>Implementation:</b></p> <ul style="list-style-type: none"> <li>- Has the program been implemented as intended?</li> <li>- What factors (positive and negative) have affected the implementation?</li> <li>- Have program participants (Aboriginal Education Assistants, teachers, students) been satisfied with the program?</li> <li>- How effective were the arrangements that were established to support implementation?</li> <li>- What components of the program were considered most/least useful?</li> <li>- How have families and communities engaged in the program?</li> <li>- Did the program meet the expectations of participants and community members?</li> <li>- Has the program supported increased uptake of the Premiers Sporting Challenge?</li> </ul> <p><b>Reach:</b></p> <ul style="list-style-type: none"> <li>- What proportion of eligible schools and students participated?</li> <li>- Has the uptake of the program varied by Indigenous status or rural/metropolitan location?</li> </ul> <p><b>Future direction:</b></p> <ul style="list-style-type: none"> <li>- How can the program be improved in future?</li> <li>- What support and monitoring arrangements should be maintained in future?</li> <li>- How will the program, or the impacts of the program, be sustained in schools beyond the intervention timeframe?</li> <li>- Will additional resources be required to continue or further develop the program?</li> </ul>	<p>Interviews with:</p> <ul style="list-style-type: none"> <li>- Aboriginal Education Assistants</li> <li>- Teachers</li> <li>- Program implementation staff</li> </ul> <p>Classroom discussion activity</p> <p>Program implementation records</p>

## 2.2 Evaluation preparation

Ethics approval was received from the Aboriginal Health and Medical Research Council (AH&MRC) Ethics Committee in April 2014.

An Activity Challenge Registration Kit was provided to each student to take home to their caregiver. The Registration Kit also included information about the evaluation (including each evaluation component) and how information provided as part of the Activity Challenge will be used.



Consent for participating in the Activity Challenge and consent for participating in the evaluation were presented as two separate consent statements on the same page. All students participating in the Activity Challenge also provided caregiver consent to participate in the evaluation.

Prior to the commencement of the Challenge teachers dialled in to a training session. During this training session information was also provided on the evaluation, the different components of the evaluation, and additional teacher responsibilities in relation to components 2, 3, and 4. Teachers had the opportunity to ask questions and clarify elements of the evaluation.

## 2.3 Data collection and analysis

### Component 1: Physical activity log

#### **Individual student data**

As part of participation in the Challenge, students record their pedometer readings and minutes of moderate-vigorous physical activity on the Activity Challenge website each day. The Activity Challenge website was developed by Azion Wellness.

The data items collected through the online platform are: daily number of steps, daily minutes of moderate-vigorous physical activity, age, gender, school, and Aboriginal status.

As part of registration, written consent from caregivers was obtained for physical activity data entered on the website to be used for evaluation.

In order to collect baseline physical activity data, two days prior to the commencement of the Challenge teachers were asked to record students' individual pedometer steps and minutes of physical activity on a log sheet.

Once the Activity Challenge commenced, students recorded physical activity on the Activity Challenge website or logbook as part of participation in the Activity Challenge. Individual student data was then entered directly onto the Activity Challenge website by students, with the support of teachers, Aboriginal Education Assistants and other Education Assistants.

#### **Class data**

Teachers also calculated the daily average steps completed by their class, and entered this into the Activity Challenge website to move their class through the online journey. This data was used to award prizes for those classes with the highest average daily steps across the Activity Challenge period. This data was also utilised for the purposes of the evaluation.

#### **Analysis**

At the conclusion of the Activity Challenge data entered into the online platform was provided by Azion Wellness to the NSW Ministry of Health. This data was then provided to CIRCA to undertake analysis for inclusion in the evaluation.

Data was reformatted and cleaned to prepare for analysis. The list of student names was first checked against the names of students who completed both pre and post surveys (Component 2). Thirteen student entries were removed from the sample as they had no details entered for demographics (age, gender, Aboriginal status), no log data, and they also did not complete pre and post surveys, so it was assumed they did not participate in the Challenge. Three students were added as there was no entry for them in the Azion data, but they completed pre and post surveys, so it was assumed they participated in the Challenge but did not have an individual profile on the website.

Baseline data on the two days prior to the Challenge commencement was then entered into the log data set for each student. Baseline data was provided for 11 classes, with baseline data provided for 106 students participating in the Challenge (33% of Challenge participants).

Analysis on log data was undertaken using SPSS version 22. Given the Challenge was in school hours only, only weekdays were included in the analysis (some students had provided data for weekend days).

Data cleaning involved recoding erroneous pedometer values as missing. Round values (10000, 20000 and 30000) were assumed to not be actual pedometer readings and were removed for analysis. The data file received also had missing pedometer data as 0, as such 0 was also recoded as missing. In relation to data on minutes of moderate-vigorous physical activity, 21 values had an unreasonably high value of minutes of moderate-vigorous physical activity so these were recoded to a maximum of 240 minutes (4 hours).

This prepared data set was used to describe the profile of students who participated in the Activity Challenge, and undertake descriptive statistics on pedometer data and minutes of moderate to vigorous physical activity.

## Component 2: Pre-post physical activity survey

### **Pre-post survey administration**

Students completed a pre- and post-Challenge survey about their levels of physical activity. The survey instrument included the Physical Activity Questionnaire for Older Children (PAQ-C) in order to calculate levels of physical activity among the students (Kowalski, et al., 2004), and a question on sedentary behaviour from the NSW Schools Physical Activity and Nutrition Survey (SPANS) 2010 (Hardy, et al., 2011).

The pre-post survey was self-complete, with teaching staff providing assistance to students. An survey instruction manual was prepared for teaching staff to assist in administering the survey.

The Registration Kit provided to caregivers included an information statement about the pre-post surveys. Written parental consent was obtained for students to complete the pre-post surveys in the classroom. Hard copies of the surveys and the instructions were posted to schools.

Teachers were advised to complete the pre-Challenge survey with their classes in the final week of Term 1 (before the Challenge began, w/c 7 April 14), and repeat the survey in the final week of Term 2 (final week of the Challenge, w/c 23 June 14). CIRCA managed communication and follow up with teachers directly. Given time constraints during class time, students being absent and increased time pressure in the final weeks of term, surveys were completed across a broader time period.

Table 1 below indicates the pre-post survey sample and dates. The pre-survey was completed over a two week period and the post-survey over an eight week period. This raises some concerns in relation to data quality, and is likely to have reduced the demonstrated impact of the program given the extended post-Challenge time period.

**Table 1: Pre and post survey sample by date completed**

<b>Week commencing</b>	<b>Number of surveys completed</b>	<b>%</b>
<b>Pre survey</b>		
07.04 - final week term1	213	75.8
28.04 - first week term 2	68	24.2
<b>Total surveys</b>	<b>281</b>	<b>100.0</b>
Missing	26	
<b>Post survey</b>		
23.06 - final week of term 2	103	43.8
14.07 - first week term 3	8	3.4
28.07 - week 3, term 3	33	14.0
04.08 - week 4, term 3	14	6.0
11.08 - week 5, term 3	77	32.8
<b>Total surveys</b>	<b>235</b>	<b>100.0</b>
Missing	72	
<b>Both pre and post surveys (paired data)</b>	<b>209</b>	

## Analysis

Teachers were provided with an addressed express post envelope to return completed surveys to CIRCA. Survey data was entered into SPSS, with pre and post surveys linked.

In order to enable data linkage, students were asked to provide their name and date of birth on both surveys. This also enabled their participation in the Challenge to be cross verified with the physical activity log data (Component 1). After linkage, identifying information was deleted, and no individuals are identifiable in reporting.

Analysis on pre-post survey data was undertaken using SPSS version 22. During the analysis phase pre and post PAQ-C scores were computed as outlined in the PAQ-C manual (Kowalski, et al., 2004).

In relation to sedentary behaviour, total daily values were recoded where they were deemed to be an overestimate. Specifically on weekdays more than 8 hours of screen time was recoded to a maximum of 8 hours, and for weekend days more than 14 hours of screen time was recoded to a maximum of 14 hours.

Missing dates were imputed for eight cases where post survey date was not completed by students, these dates were based on the dates other students from their class had completed post surveys.

Analysis of the student survey uses paired data from the pre and post surveys. 209 students completed both pre and post surveys, 72 completed only pre surveys (including 34 from non-returned classes), and 26 completed only post surveys.

Descriptive analysis was conducted, and differences relating to gender and Aboriginal identification were also explored.

## Component 3: Qualitative interviews

### Interviews with teachers and program staff

In order to understand program implementation, experience and future directions, qualitative interviews were undertaken with class teachers and program implementation staff. Semi-structured interviews were conducted to explore their experiences in implementing the Challenge, and their perceptions.

Topics discussed included satisfaction with Challenge (including training and resources provided), impacts, suggestions for improvement and factors affecting implementation.

Interviews with teachers and program implementation staff were arranged directly by CIRCA. Eleven of the fifteen teachers were interviewed. Interviews with five teachers were conducted face-to-face (two individual interviews and three were interviewed as a group) and the remaining seven by telephone. The remaining four teachers either indicated they were unavailable to be interviewed (2), had moved schools (1), or were not able to be contacted despite multiple contact attempts (1).

Program implementation staff were interviewed face-to-face as a group of three.

Verbal consent was provided at the start of the interview. Additional verbal consent was provided for those respondents who were happy for their interview to be recorded and transcribed.

### Analysis

Audio recorded interviews were transcribed, and notes were written for those that were not recorded. Thematic analysis was undertaken on interview data.

## Component 4: Classroom discussion activity

This component provided an opportunity to hear from students about their experiences and perceptions of the Challenge, including what parts they liked the most, what they liked least, suggestions for improvement, and how they think the program impacted their level of physical activity.

Parents provided written consent during the registration process for student participation in the classroom activity as part of the evaluation. Classroom discussions were facilitated by Aboriginal researchers.

Classroom discussions were conducted in 10 classes at five schools between 18 June and 25 June 2014 (the last two weeks of term 2). Classes were chosen in consultation with the Program Implementation Team and represented a mix in relation to geography and levels of participation in the Challenge (indicated by class average pedometer readings). Teachers were then approached by CIRCA to confirm they were happy for their classes to participate, and a time was scheduled for the visits.

### **Analysis**

Sessions were recorded, however, given the classroom nature of the discussions the researcher facilitating the discussion wrote up interview notes, including quotes. Thematic analysis was then undertaken on classroom discussion data. Classroom discussions were not transcribed.

### **Component 5: Program implementation records**

Documentation relating to program implementation was also reviewed in order to further understand intended implementation processes. These included information packs that were sent to schools, teacher challenge resources, quick guides to the Challenge, teacher user guides, and the student log book.

# 3. Pilot outputs

## 3.1 Participating classes

Twenty-five schools were invited to participate in the Activity Challenge, with nine schools participating (36%). Fifteen classes across these nine schools participated. Participating schools were located in a mix of major cities (1 school, 41 students), inner regional areas (4 schools, 147 students), outer regional areas (2 schools, 78 students) and remote areas (2 schools, 56 students).

All schools participating in the Challenge were already signed up to the Premier’s Sporting Challenge.

## 3.2 Student profile

All students were given parental/carer permission to participate in the Challenge and in the Challenge evaluation. In total 318 students participated in the Challenge.<sup>3</sup> There was an equal number of boys and girls (159 each). The average age of students was 10.9 years (SD=0.88), with the youngest participant being 8 years and the eldest 13 years.<sup>4</sup>

Most students were Aboriginal and/or Torres Strait Islander (56.6%), 42.1% were non-Aboriginal and 1.3% did not know or did not respond.

Students were in years 5 and 6. Ten of the participating classes were composite classes, with one class being a 4/5/6 composite class (as such a few year 4 students also participated in the Challenge).

**Table 2: Activity Challenge participant profile**

	Number	%
<b>Total participants</b>		
Total participants	318	100.0
Boys	159	50.0
Girls	159	50.0
<b>Age</b>		
8 years	3	0.9
9 years	9	3.1
10 years	10	30.5
11 years	11	40.3
12 years	12	23.6
13 years	13	0.9
Missing	2	0.6

<sup>3</sup> This includes those students identified through Azion log data and additional three students who completed pre and post surveys but were not part of log data. This excludes 13 with no fields completed in log data other than their name, and no pre and post survey entries.

<sup>4</sup> One age entry of 18 was removed, one age entry of 6 was removed, both became missing values. One entry of 7 years was corrected using DOB entry from survey data.

Identify as Aboriginal and/or Torres Strait Islander		
Aboriginal and/or Torres Strait Islander	180	56.6
Non-Aboriginal	134	42.1
Don't know / missing	4	1.3

Source: Student survey and Azion log data

1. The categories of Aboriginal, Torres Strait Islander and Aboriginal and Torres Strait Islander have been combined to protect the privacy of students due to low numbers in the latter two categories

### 3.3 Competition results

Classes competed to achieve the highest number of average daily steps across the Challenge period. Table 3 below shows the final competition results and the prizes awarded to the winning classes / schools. As two classes from the same school placed in the top three, third prize was awarded to the fourth placed class.

All participating classes exceeded the target of 5,000 steps for their final daily average across the Challenge, with eight classes having a daily average of 10,000 steps or more.

**Table 3: Final Activity Challenge results**

School	Class	Average daily steps	Rank	Prize
School 1	5C	11562	1	\$3000
School 2	6K	11390	2	\$1500
School 1	5/6R	11236	3	
School 3	5/6D	11159	4	\$750
School 4	5/6B	10917	5	
School 1	6R	10859	6	
School 2	5/6P	10141	7	
School 5	5/6C	10099	8	
School 2	5/6S	9952	9	
School 6	4/5/6	9900	10	
School 7	5/6	9180	11	
School 8	5/6	9076	12	
School 9	6	7166	13	
School 9	5	6547	14	
School 4	5/6M	5925	15	
<b>Total average</b>		<b>9674</b>		

Source: Azion log data





# 4. Impact on physical activity levels

## 4.1 Sedentary activity levels

Evaluation question

**Has the program decreased sedentary activity levels of participating students?**

### Introduction

The student survey measured screen time as a proxy for sedentary behaviour. It is acknowledged that screen time alone does not cover all sedentary behaviour. However, evidence indicates that recreational screen use is the primary contributor to total sedentary behaviours outside school hours among young people (Hardy, et al., 2011).<sup>5</sup> Other components of sedentary behaviour such as education, passive travel (e.g. car or bus), cultural (e.g. reading and craft) and social (e.g. sitting and chatting with friends) were not measured.

Screen time includes watching TV, watching DVDs/videos, using a computer for fun, using a smartphone or tablet for fun. The national guideline for electronic media use among children aged five to 18 recommends that they “should not spend more than two hours a day using electronic media for entertainment (e.g. computer games, TV, Internet), particularly during daylight hours” (Department of Health and Ageing, 2010).

For analysis, time spent watching TV, watching DVDs/videos, using a computer for fun, using a smart phone or tablet for fun was totalled to calculate daily screen time. These values were used to calculate mean screen time for weekdays and weekend days and total weekly screen time. Only those students with paired data were included in the analysis.

### Average screen time on weekdays and weekends

#### Screen time on weekdays

Average daily screen time on a usual weekday was slightly higher before compared to after the Challenge, at 3.0 hours pre-Challenge and 2.7 hours post-Challenge. As shown in Figure 2 below, screen time on Mondays was higher than other weekdays.

There was little difference in screen time on weekdays among boys and girls. There was also little difference between Aboriginal and/or Torres Strait Islander and non-Aboriginal students.

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<sup>5</sup> Among the sample included in the NSW Schools Physical Activity and Nutrition Survey (SPANS) 2010, among all year 6 students the median number of hours spent in small screen recreation (SSR) was 3.0, compared to median hours spent in other sedentary behaviours being: education (0.0), travel (0.3), cultural (0.9) and social (0.1).

## Screen time on weekend days

On weekends, average daily screen time on a usual weekend day was less after the Challenge compared to before. Before the Challenge average daily screen time on a usual weekend day was 3.9 hours, with this being reduced to 3.2 hours on weekend days after the Challenge ( $t=2.64$  with 204 DF,  $p=0.009$ , 95% CI 0.17 to 1.21). As shown in Figure 2 screen time was the highest on Sundays.

There was little difference in weekend day screen time among boys and girls pre-Challenge. Post-Challenge however, screen time reduced significantly among girls. Pre-Challenge average screen time for girls on a usual weekend day was 4.0 hours, this reduced to 2.9 hours post-Challenge ( $t=3.07$  with 112 DF,  $p=0.003$ , 95% CI 0.36 to 1.69).

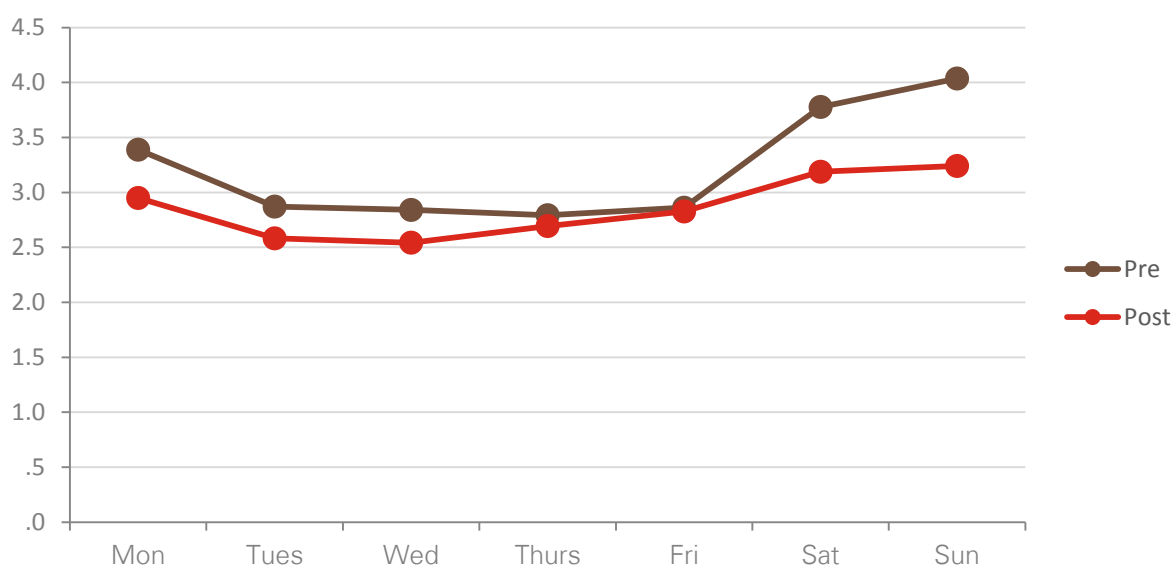
Average screen time on a usual weekend day was less among Aboriginal and/or Torres Strait Islander students compared to non-Aboriginal students in both pre and post surveys, however, these differences were not statistically significant at  $p < 0.05$ .

**Table 4: Average screen time in hours/day on a usual weekday and weekend day**

		Pre Challenge	Post Challenge
<b>Weekdays</b>			
All	n=205	3.0 (SD 2.4)	2.7 (SD 2.2)
Boys	n=92	3.1 (SD 2.6)	2.7 (SD 2.3)
Girls	n=113	2.8 (SD 2.3)	2.8 (SD 2.2)
Aboriginal and/or Torres Strait Islander	n=108	2.8 (SD 2.4)	2.8 (SD 2.3)
Non-Aboriginal	n=87	3.1 (SD 2.5)	2.7 (SD 2.2)
<b>Weekend days</b>			
All	n=205	3.9 (SD 3.8)	3.2 (SD 3.4) *
Boys	n=92	3.8 (SD 3.8)	3.5 (SD 3.8)
Girls	n=113	4.0 (SD 3.9)	2.9 (SD 3.1) *
Aboriginal and/or Torres Strait Islander	n=108	3.5 (SD 3.9)	3.0 (SD 3.2)
Non-Aboriginal	n=87	4.4 (SD 3.8)	3.7 (SD 3.8)

\*Statistically significant difference at  $p < 0.05$  between pre and post survey  
Source: Student survey. Data includes paired cases only

**Figure 1: Average screen time (hours) per day**



### Screen time ranges

The greatest change in relation to screen time occurred in the highest range of more than 4 hours, particularly on weekend days. Specifically on an average weekend day the proportion of students spending more than four hours on screen time reduced from 35% pre-Challenge to 26% post-Challenge. This change was statistically significant using McNemar's test for paired data ( $\chi^2=5.3$ ,  $p=0.021$ ).

As change occurred in this upper range there was no difference in relation to students meeting the screen time guidelines of no more than two hours of screen time on a usual day pre and post Challenge (50% pre Challenge and 49% post Challenge).

**Table 5: Low, medium and high screen time pre and post Challenge (n=205)**

	Pre Challenge	Post Challenge
<b>Usual week day</b>		
Up to 2 hours per day (as per national guidelines)	50.2	49.3
2.1 to 4 hours per day	18.5	25.4
More than 4 hours per day	31.2	25.4
<b>Usual weekend day</b>		
Up to 2 hours per day (as per national guidelines)	42.4	50.7
2.1 to 4 hours per day	22.4	23.4
More than 4 hours per day	35.1	25.9 *
<b>Average across all days</b>		
Up to 2 hours per day (as per national guidelines)	44.4	47.8
2.1 to 4 hours per day	23.9	26.8
More than 4 hours per day	31.7	25.4

\*Statistically significant difference at  $p < 0.05$  between pre and post survey  
Source: Student survey. Data includes paired cases only

## 4.2 Physical activity levels

Evaluation question

**Has the program increased physical activity levels of students?**

### Introduction

The student survey measured physical activity through the inclusion of the PAQ-C instrument. PAQ-C scores in the pre and post surveys were then compared to measure change before and after the Challenge. A score of 1 indicates low physical activity and a score of 5 indicates high physical activity.

Data from the physical activity log was also used to investigate physical activity using daily step data for classes and individual students, as well as self reported minutes of undertaking moderate to vigorous physical activity each day. Daily log data was collected two days before the Challenge started (with this being the baseline data), and each day of the Challenge. Daily steps were averaged each week, to investigate the trend over time.

### PAQ-C scores

#### Overall PAQ-C scores

The mean PAQ-C score among students before the Challenge was 3.2, with the mean score increasing slightly to 3.3 post-Challenge. Results from paired samples t-test indicate that this slight increase was statistically significant ( $t=-2.3$  with 207 df,  $p=0.023$ ). The mean PA score increase was 0.11 (95% CI  $-0.21$  to  $-0.15$ ). While statistically significant this represents minimal change, with an average score of 3 indicating moderate physical activity both pre and post Challenge.

Pre-Challenge PAQ-C scores were higher among boys than girls. PAQ-C scores for boys did not increase as a result of the Challenge. The results for girls were, however, significant. The mean PAQ-C score for girls increased slightly from 3.1 before the Challenge to 3.3 after the Challenge ( $t=-2.51$  with 114 df,  $p=0.014$ ). The mean PAQ-C score increase for girls was 0.16 (95%CI  $-0.29$  to  $-0.03$ ).

Before the Challenge PAQ-C scores were higher among Aboriginal and/or Torres Strait Islander students compared to non-Aboriginal students. For Aboriginal and/or Torres Strait Islander students there was no difference in PAQ-C scores pre- and post-Challenge. For non-Aboriginal students scores increased from 3.0 to 3.2, with this increase being significant ( $t=-3.0$  with 87 df,  $p=0.004$ ). The mean PAQ-C score increase for non-Aboriginal students was 0.20 (95% CI  $-0.34$  to  $-0.07$ ). Again while statistically significant this represents minimal change, with the average score of 3 indicating moderate levels of physical activity both before and after the Challenge.



**Table 6: PAQ-C scores by demographic characteristics**

		Pre Challenge	Post Challenge
All	n=208	3.2	3.3 *
Boys	n=93	3.4	3.4
Girls	n=115	3.1	3.3 *
Aboriginal and/or Torres Strait Islander	n=110	3.4	3.4
Non-Aboriginal	n=88	3.0	3.2 *

\*Statistically significant difference at  $p < 0.05$  between pre and post survey  
Source: Student survey. Data includes paired cases only

### PAQ-C scores by post survey date

The differing dates that students completed the post-survey enable comparison of pre and post PAQ-C scores for those who completed the survey in the last week of the Challenge (final week of term 2), and a comparison of pre and post PAQ-C scores for those who completed the post survey in term 3 (the term after the Challenge ended).

These results indicate that there was a significant increase in PAQ-C scores for those who completed the post survey in the final week of Term 2, whereas PAQ-C scores pre and post-Challenge were not significantly different for those who completed the survey in Term 3.

Among those students who completed the post survey at the end of Term 2, their mean PAQ-C score rose slightly from 3.1 at the start of the Challenge to 3.4 at the end. Results from paired samples t-test indicate that this slight increase was statistically significant ( $t=-4.9$  with 95 df,  $p<0.001$ ). The mean PAQ-C score increase was 0.36 (95% CI  $-0.51$  to  $-0.22$ ). This indicates that the Challenge slightly increased physical activity for students, however, this was not necessarily maintained in the term following the Challenge.

**Table 7: PAQ-C scores by post survey completion date**

		Pre Challenge	Post Challenge
All	n=208	3.2	3.3 *
Post survey completed end Term 2	n=96	3.1	3.4 *
Post survey completed in Term 3	n=111	3.3	3.2

\*Statistically significant difference at  $p < 0.05$  between pre and post survey  
Source: Student survey. Data includes paired cases only

### Selected individual PAQ-C items

The PAQ-C includes individual items asking children how often they did physical activity during school time and out of school hours. Tables 9 to 11 below indicate student responses to these questions pre and post Challenge.

Notable changes pre and post Challenge include increases in the proportion of students, in the last 7 days, who; were always active during PE classes (40% pre v 52% post); were very active after school four or more days per week in the afternoon (43% v 52%); were very active two or more times (67% v 75%); and, did physical activity in their free time 5 or more times (28% v 36%).

**Table 8: Usual activity during school time for the last 7 days pre and post Challenge**

	Pre Challenge	Post Challenge
<b>Usual activity during recess (last 7 days)</b> n=201		
Sat down (talking, reading, doing schoolwork)	7.5	8.5
Stood around or walked around	11.9	13.4
Run or played a little bit	23.9	17.9
Ran around or played quite a bit	18.4	19.9
Run and played hard most of the time	38.3	40.3
<b>Usual activity during lunch (last 7 days)</b> n=202		
Sat down (talking, reading, doing schoolwork)	5.0	5.9
Stood around or walked around	12.4	12.9
Run or played a little bit	22.3	20.3
Ran around or played quite a bit	21.8	25.2
Run and played hard most of the time	38.6	35.6
<b>Frequency of being very active during PE classes</b> n=206		
I don't do PE	1.5	1.5
Hardly ever	3.4	2.9
Sometimes	19.9	16.0
Quite often	35.0	28.2
Always	40.3	51.5

Source: Student survey. Data includes paired cases only

**Table 9: Usual activity outside of school hours for the last 7 days pre and post Challenge**

	Pre Challenge	Post Challenge
<b>Number of afternoons being very active after school</b> n=205		
None	12.7	14.1
One time	13.2	7.3
Two or 3 times	30.7	26.8
Four or 5 times	17.1	23.9
Six times or more	26.3	27.8
<b>Number of evenings being very active after school</b> n=202		
None	15.3	17.8
One time	22.8	12.9
Two or 3 times	27.7	30.2
Four or 5 times	16.8	20.3
Six times or more	17.3	18.8
<b>Number of times on weekend being very active</b> n=202		
None	12.9	11.9
One time	20.3	13.4
Two or 3 times	29.2	33.7
Four or 5 times	20.3	24.3
Six times or more	17.3	16.8

Source: Student survey. Data includes paired cases only



**Table 10: Physical activity during free time for the last 7 days, pre and post Challenge**

	Pre Challenge	Post Challenge
All or most of my free time was spent doing things that involve little physical effort	14.3	14.8
I sometimes did physical things in my free time (1 to 2 times last week)	29.1	22.0
I often did physical things in my free time (3 to 4 times last week)	28.6	27.5
I quite often did physical things in my free time (5 to 6 times last week)	11.0	14.8
I very often did physical things in my free time (7 or more times last week)	17.0	20.9

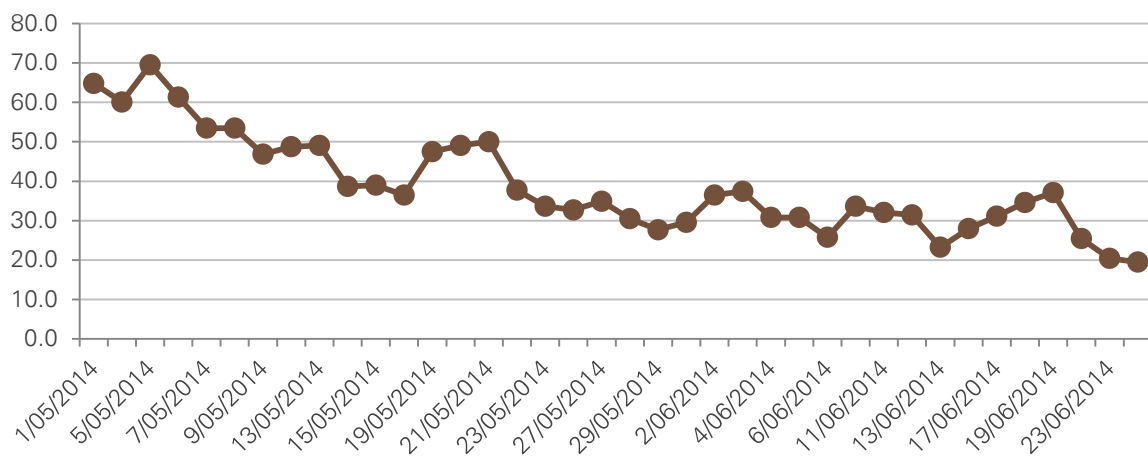
Source: Student survey. Data includes paired cases only

### Average daily steps

Of the 318 participants in the Challenge, 274 students had some individual daily pedometer data entered into the online platform (86.1% all participants). As Figure 3 indicates, the level of data entry varied across the Challenge days, with a general decline in response rate as the Challenge went on. The lowest response rate was for the final two days of the Challenge, which was Week 9. As such data for Week 9 should be treated with particular caution as noted in the following analysis.

Data for the two baseline days was limited, with this data being available for 110 students (34.6%).

**Figure 2: Response rate for individual pedometer data by Challenge day**



### A note on data quality

There are several limitations to the accuracy of pedometer data. Firstly there were complaints that the pedometers would restart, freeze or break on occasion with students losing steps completed. Secondly, pedometers were sensitive and additional steps could be added by shaking or twirling.

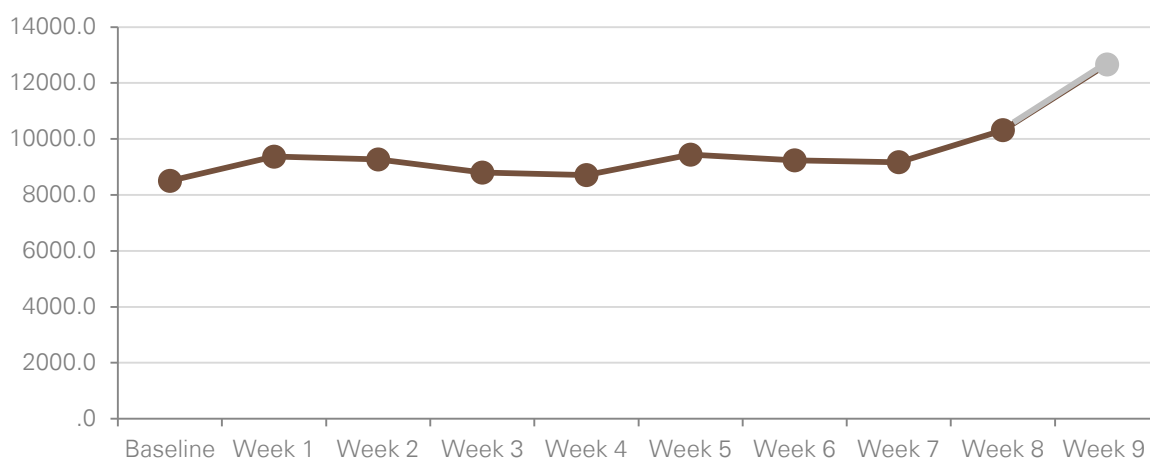


Lastly, as asking students to wear pedometers and record steps is itself an intervention, it is likely that 'baseline' is not a true baseline, and activity levels may have increased on the two baseline days.

### Average daily steps by week

Average daily number of steps (during school hours only) were calculated using individual student data at baseline and for each week of the Challenge. Figure 4 below shows that average daily steps was fairly consistent across the weeks of the Challenge, except for the last two weeks where there was an increase. Week 9 is greyed out in Figure 4 as the data for this week should be interpreted with caution as it includes only two days (Monday and Tuesday). There was a reduced number of students who completed log data for these days, and it is likely that data contains some fabricated results. Therefore these data should not be used to make inferences overall and is not considered further.

**Figure 3: Average daily steps by week**



**Table 11: Average daily steps by Challenge week**

	Baseline	Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 6	Wk 7	Wk 8	Wk 9
Mean	8504	9368	9268	8799	8710	9440	9236	9170	10315	12664
SD	2798	2897	3148	3407	3088	3045	2943	2699	3834	4274
Min	2680	2688	3416	2500	2500	3354	4368	3657	3882	5003
Max	16441	17607	27500	23146	21560	19693	19127	16847	23573	22736
n	106	219	241	182	186	120	125	125	123	69

Source: Log data (Azion online data)

### Meeting pedometer step guidelines

Research indicates that the recommended daily pedometer determined steps for children is 16,000 (Department of Health and Ageing, 2010). The Activity Challenge only measured steps during school hours. The authors were unable to find a reliable measure for how many steps children should undertake during class hours to meet the recommended daily steps of 16,000. As such the

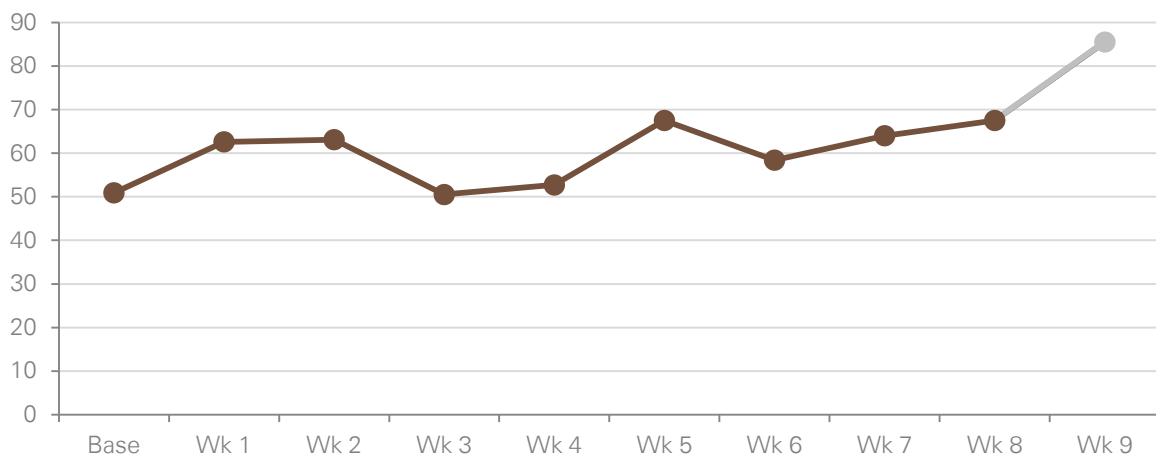




benchmark was set at 8,000 based on the assumption that children are awake for 14 hours on school days, with 12 "active hours" (one hour at the start and end of the day removed). As students are at school for 6 hours it was therefore assumed that they should undertake half their recommended daily steps while at school (i.e. 8,000 steps).

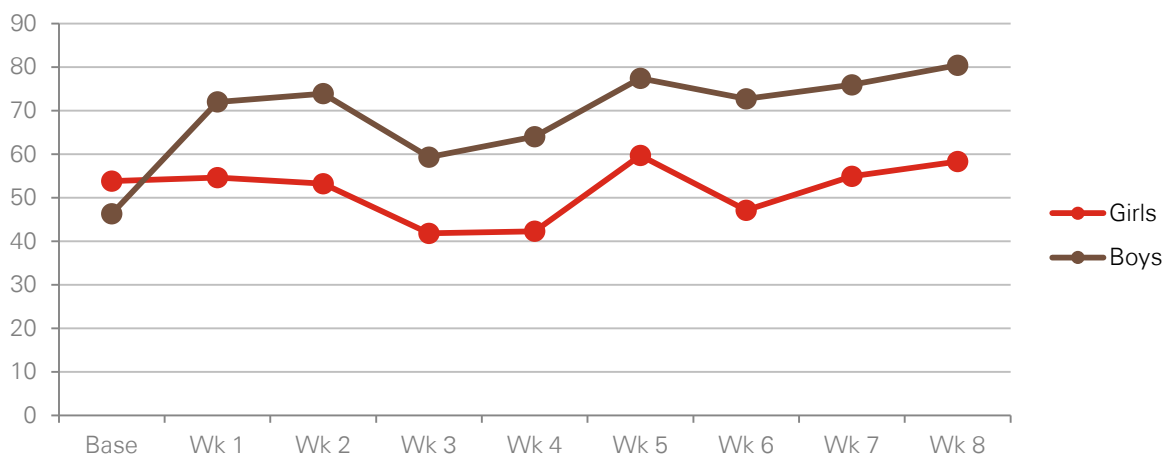
Figure 5 shows the proportion of students who meet the daily guidelines of 8,000 steps or more for each week of the Challenge. The proportion of students meeting the daily guidelines ranged from 62.6% in Week 1 to 67.5% in Week 8. While Figure 4 of average daily steps showed a slight decrease in Weeks 3 and 4 of the Challenge, this dip is more pronounced when looking at the proportion meeting daily step guidelines. Across the other weeks the proportion averaging 8,000 or more steps per day was around 60-70% (excluding week 9).

**Figure 4: Proportion with average daily steps of 8,000 or more by Challenge week**



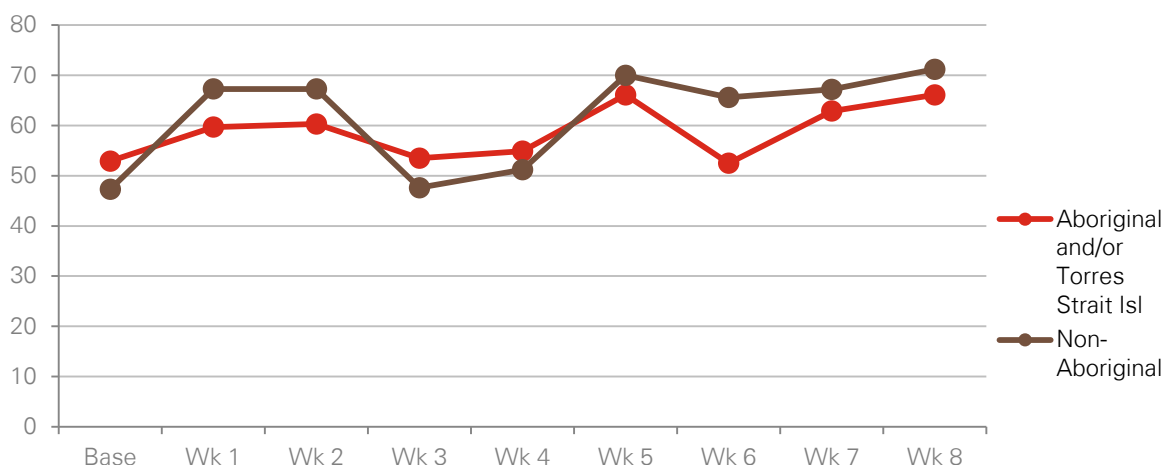
A higher proportion of boys averaged 8,000 or more steps daily compared to girls for each week of the Challenge. Figure 6 shows that the general trend across the weeks was the same for boys and girls.

**Figure 5: Proportion of boys and girls with average daily steps of 8,000 or more by week**



The proportion of Aboriginal and/or Torres Strait Islander and non-Aboriginal students who averaged 8,000 or more steps daily was similar. Figure 7 shows the comparison across the Challenge weeks, and several weeks where a higher proportion of non-Aboriginal students met the 8,000 or more average steps compared to Aboriginal and/or Torres Strait Islander students.

**Figure 6: Proportion of Aboriginal and non-Aboriginal students with average daily steps of 8,000 plus**



**Table 12: Proportion with average daily steps of 8,000 or more by Challenge week**

	Base	Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 6	Wk 7	Wk 8	Wk 9	Total Wk 1-9
All	50.9	62.6	63.1	50.5	52.7	67.5	58.4	64.0	67.5	85.5	69.0
Girls	53.8	54.6	53.2	41.8	42.3	59.7	47.1	54.9	58.3	73.7	59.7
Boys	46.3	72.0	73.9	59.3	64.0	77.4	72.7	75.9	80.4	100.0	79.2
Aboriginal and/or Torres Strait Islander	52.9	59.7	60.3	53.5	54.9	66.1	52.5	62.9	66.1	82.9	66.7
Non-Aboriginal	47.3	67.3	67.3	47.6	51.2	70.0	65.6	67.2	71.2	87.5	73.0

Source: Log data (Azion online data)

## Minutes doing moderate-vigorous physical activity

In their daily activity log, students were asked to indicate the number of minutes spent undertaking moderate-vigorous physical activity, with response options being in 20 minute increments. Given the discrete nature of this data, median values have been used to describe average daily minutes rather than the mean. Twenty-one values had an unreasonably high value of minutes of moderate-vigorous physical activity, these were recoded to a maximum of 240 minutes (4 hours).

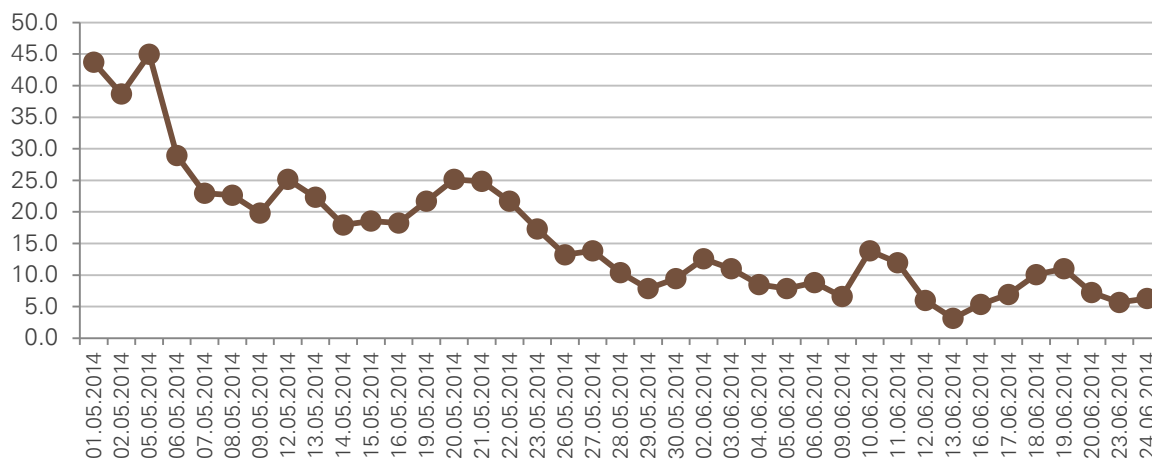
### A note on data quality

This data includes a high proportion of missing values which raises significant issues around the validity of this data component. The level of entry also fluctuated, declining considerably as the Challenge went on. As shown in Figure 8, the response rate of minutes of physical activity declined considerably throughout the Challenge. The Challenge day with the higher number of entries was the first Monday of the Challenge (5 May 2014), with 143 students entering minutes for this day (45.0%



of Challenge participants). The day with the least data entry was the 13 June with only 10 students entering minute data for this day (3.1%).

**Figure 7: Response rate for minutes of physical activity by Challenge day**



### Average (median) daily minutes of moderate-vigorous physical activity

For every day of the Challenge the median daily minutes for those students who completed this data were between 40 and 60 minutes of vigorous physical activity. Table 13 shows median daily minutes by week, and indicates a dip to 40 minutes in the middle of the Challenge, with median minutes being 60 in the first two and last two weeks of the Challenge.

**Table 13: Median daily minutes of physical activity by week**

	Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 6	Wk 7	Wk 8	Wk 9
Median	60	60	40	40	40	40	60	60	40
Min	20	20	20	20	20	20	20	20	20
Max	240	240	240	240	160	240	160	240	80

### Meeting time spent in physical activity guidelines

The national physical activity guidelines indicate that children should do at least 60 minutes of moderate-vigorous physical activity each day (Department of Health and Ageing, 2010).

The average proportion of students across the Challenge days who met the guideline for daily minutes of physical activity was 49.1% of students who completed minute data. Figures 9 and 10 below show how this proportion varied over time. Figure 9 shows the average daily proportion meeting the guideline for each week of the Challenge, and indicates a dip in the middle of the Challenge and a rise at the end of the Challenge



**Figure 8: Average proportion doing at least 60 minutes of activity per day by Challenge week**

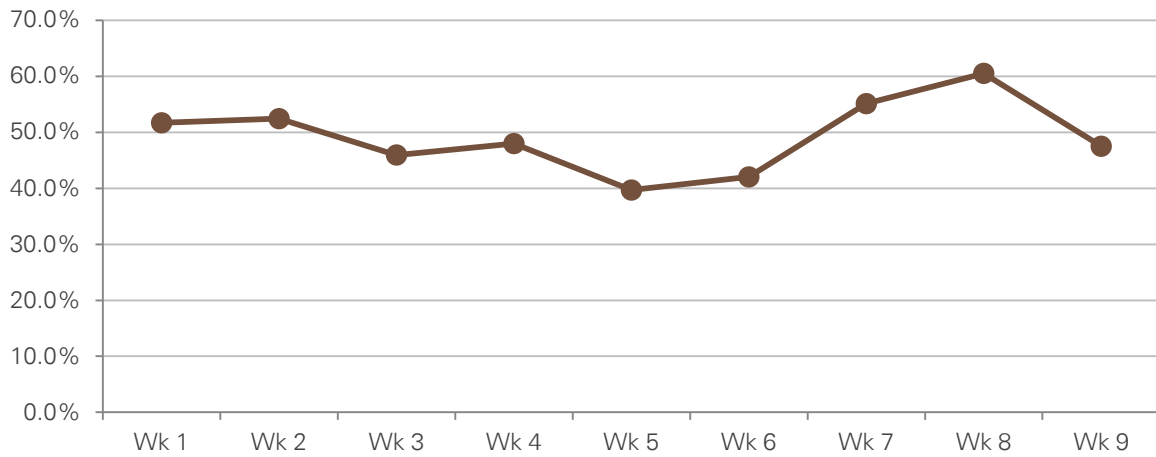
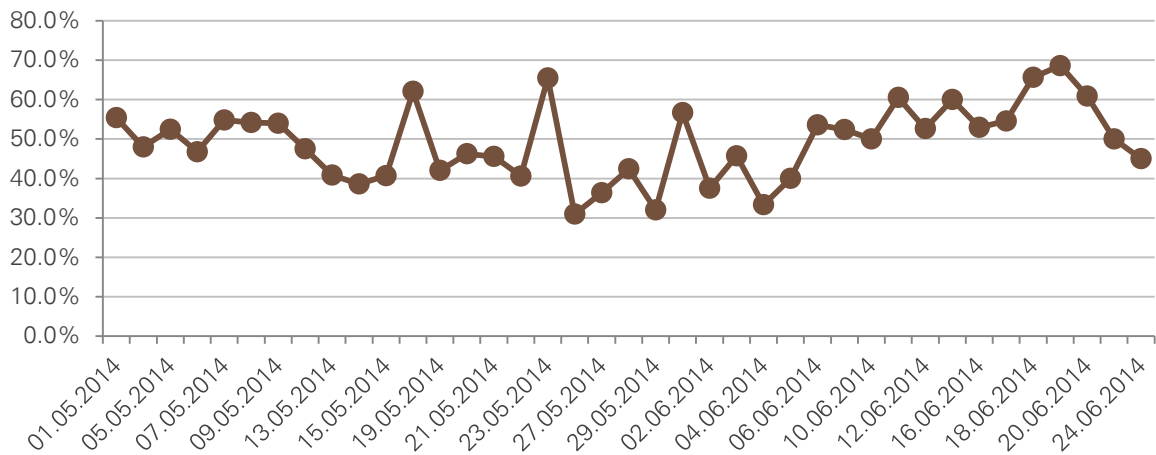


Figure 10 shows the proportion of students meeting the guidelines for moderate-vigorous physical activity for each day of the Challenge. In weeks 3, 4, 5, 6 and 7, the weekday with the highest proportion of students doing at least 60 minutes of moderate-vigorous physical activity was Friday.

**Figure 9: Proportion of students doing at least 60 minutes of activity for each day of the Challenge**



## 4.3 Qualitative feedback on physical activity

Each teacher provided qualitative feedback about the benefits of the program for the students in their class. Students also provided feedback about the program in the classroom discussion activity. Teachers and students reported that engagement in the Activity Challenge was high and on the whole students were highly motivated to participate in the Challenge. Increased physical activity, particularly among less active students, and increased knowledge and awareness of physical activity and its benefits were cited as some of the benefits of the program. Teachers reported that the Challenge was a great opportunity to motivate students to become more physically active and felt the program was successful in this regard. It also led to a greater focus by teachers on incorporating physical activity routinely into daily class time.

Students reported that they increased their physical activity during recess and lunchtime in order to increase their steps and beat their friends or improve their personal best. Doing more physical activities, becoming fit and feeling healthier were identified by the students as some of the things they liked best about the Challenge.

Teachers also indicated that students were more engaged in learning during the Challenge as the physical activities performed during class time addressed fatigue and helped students re-engage with classroom learning.

*One [student] in particular, he does not do any sport at all and he wanted to be involved and ... he'd put [the pedometer] on and he'd walk around the oval, and that's the most sport I think he's done since he's been in kindergarten ... It's been a whole lifestyle change ... he was really getting a bit lazy, on the X-Box 24/7 but now he's wanting to be outside playing sport, his clothes are starting to be a bit looser on him ... so it's really good.*

*Just putting exercise more regularly into a day, like into the routine and taking more opportunities to get outside and get active ... We would choose more physical activities ... I usually would have stayed more in the room and sort of done things that were not as active and not constructive but I think it ended up being a positive, whereas in the past I sort of thought 'Oh no, not going to waste the time and get outside'. It was just the idea of having to get them out then go back in, losing too much time but after a while it was a real positive getting out there and refreshing them.*

*I've got a rather large girl and she struggled to start with but in the end she ended up getting into it and that actually motivated her to do stuff.*



# 5. Other benefits of the program

Evaluation question

**What were the other benefits of the program at the individual, school, and community level?**

## 5.1 Improved attendance and behaviour

Several teachers reported that the Activity Challenge motivated attendance at school and had had an impact on attendance among some students who had not been attending school regularly.

*I think all of them got something out of it ... One [example] that springs to mind is I had attendance issues with one of my students and when we started the Challenge those attendance issues were almost eliminated. This person was coming to school late in the mornings and stuff but then they started coming well before class time to pick up their pedometer and stuff. So that was really good.*

One teacher indicated that the Challenge had also had a positive impact on students who were known to misbehave in the playground as they were more focused on organising activities to increase their steps.

*I have a group of boys that are troubled and normally cause trouble in the playground and the Challenge motivated them to play differently and to organise activities in the playground to increase their steps ... They knew they had to keep moving and playing the games to be able to keep up with the others in the class.*

## 5.2 Improved social interaction and teamwork

Teachers also felt the Challenge facilitated positive social behaviour by promoting teamwork and encouraging students who were more socially isolated to interact with others and make new friends through planning and participating in activities based on increasing their number of steps.

*Socially, yeah, because kids are forming little groups - 'Oh let's go off and do this to get our steps at lunchtime'. So socially it was good. Especially girls, there's quite a few girls that got together in groups - 'What can we do to get our steps? Oh we'll go and walk on a basketball court or something'. So yeah, there were groups of girls that wouldn't normally hang out together that were making little groups to get their steps up. So that was good.*

*Definitely social, too, working with part of the team and encouraging each other and that sort of stuff, that was good. And, being good sportspeople and things like that, having sportsmanship.*



## 5.3 Learning opportunities

Teachers noted the benefits of incorporating the Activity Challenge into teaching components of the Stage 3 (Years 5 and 6) syllabuses. The obvious connection between the Activity Challenge and the key learning area of Personal Development, Health and Physical Education (PDHPE) meant that teachers incorporated the Challenge into teaching the Active Lifestyle strand of the syllabus.

In addition, a few teachers spoke of the relevance of the online journey to the key learning area of Human Society and Its Environment (HSIE), providing a platform through which to discuss and learn about other countries and cultures. These teachers reported this led to improved knowledge or awareness of other countries among their students.

*When we were looking at the legs and going through the countries, we'd have discussions about that and what they knew and new things that they learnt about those countries ... They loved working their way 'round the world and seeing where they got up to.*

*Well, each time we went to different countries we would just then do like an explicit lesson on teaching what that country is because a lot of these kids haven't even been on an aeroplane, let alone, you know, anywhere, so it was good. We located on the world map and then we did sort of just a basic thing on each country that we went to and where it was and what their food is, what the culture is, what the language is, all that sort of stuff.*

Teachers also noted many opportunities to incorporate mathematics lessons into the activities of the Challenge. Teachers cited covering the content substrands of addition, subtraction and division in tallying the number of steps and calculating the daily class average. One teacher also turned the process for deciding how the class would spend the prize money into a lesson on money management.

*I saw the potential in it for other lessons as well like particularly maths. So I could utilise the challenge in a lot of our maths lessons as well ... It was good ... Just from the very basic reading four and five digit numbers and comparing, like doing averages. The kids have learnt how to calculate averages just through looking at the steps from the challenge. There's so many opportunities. The addition and subtractions to see who had the most, what the class average was, what the personal average was, we looked at the little pedometers that we use, converted the steps to kilometres as well ... So lots and lots of opportunities to incorporate maths into it.*

Learning opportunities in relation to healthy lifestyles were also identified by some teachers. One teacher noted that students were more interested in eating fruit during the Challenge and suggested that there was an increase in students bringing fruit to school. Suggestions for increasing knowledge on nutrition included engaging health professionals into the classroom, which could also potentially assist teachers to implement the focus on healthy eating that was outlined in program materials.



*In the week, for a couple of weeks beforehand, I'd like to see us working with health professionals, like we could have set it up a lot better at the start and I guess at my end too, I could have got the local health service involved in maybe weighing and measuring the kids and having a chat about healthy eating and stuff ... So maybe more around the healthy eating, maybe we could have written down what we'd eaten today and put it into a category of healthy food or maybe not the good food and set goals around that as well.*

## 5.4 Benefits at a broader level

The benefits of the Activity Challenge also extended to others in the school community beyond the participating classes. Other students and teachers were interested in the pedometers and the Challenge and wanted to be involved. It was reported that some teachers who were not involved in the Activity Challenge borrowed the pedometers and became more active both individually and with their classes, and some became involved in the Challenge by comparing their steps with participating students.

*I saw teachers getting involved and just getting the class out and doing more physical activity and sort of being out and more seen within the school than just locked away in a classroom.*

There was limited feedback in relation to the benefits of the Challenge for the families of the students involved and on a broader community level. In the communities that had teams in the NSW Knockout Health Challenge, there was some mention that having the Activity Challenge running in tandem with the Health Challenge was a plus, mainly as it linked the students' participation to something that their parents or grandparents may have been involved in. Other opportunities to connect the two programs do not appear to have been pursued.

*That was good. Like it was a connection [with the NSW Knockout Health Challenge] – there was a connection there that they knew this was similar to what people in the community had been involved in, but that's probably where it stopped and I thought there might have been some other ways we could have sort of tied them in together but it didn't end up happening.*





# 6. Implementation

Evaluation question

**Was the program implemented as intended in participating schools?**

Information gathered during the qualitative discussions with students, teachers and program staff in relation to the implementation of the Activity Challenge is outlined in this section. This section provides feedback on the perceptions of the effectiveness of the implementation.

## 6.1 Pedometer distribution and use

Teachers reported that the pedometers were distributed to students in the morning and were collected at the end of the day when the daily steps were recorded. The only variation in the distribution of the pedometers across the schools was that some schools had devised systems for the pedometers to be distributed to students as soon as they arrived at school and others provided them when students first got into the classroom at nine o'clock. This resulted in a difference in the number of hours the students wore their pedometers across the schools. Some felt this impacted on the overall number of steps as some classes had an extra half hour of physical activity reported in their daily steps. There was some suggestion that streamlining the approach across the schools may produce a fairer result.

The method of distribution varied slightly across the schools. Some schools had hooks where the students would hang their pedometers at the end of the day or kept them in a box outside the classroom so students could then collect them again in the morning. Others had a system where teachers distributed them to the students.

Almost all students were allocated their own pedometer labelled with their name. This was seen as valuable and was felt by those teachers to give the students ownership of the program and their steps, as well as taking care of their pedometer.

The students indicated that on the whole the pedometers were easy to use and they enjoyed being able to see the number of steps they had taken each day. Teachers and students identified some issues with the pedometers, the most noted being that they broke and/or would reset during the day which frustrated and disappointed the students. Teachers felt that the number of pedometers provided (two per student) was necessary given they broke, and all pedometers ended up being used.

The students also indicated that they would have preferred if there was an alternative method for wearing or carrying the pedometer, with some citing that they did not always have pockets or that the pedometer would hit them when worn around the neck or the waist. Suggestions included wrist or ankle bands or a clip to attach to clothing. Students also indicated a preference for a more durable pedometer.

Both students and teachers noted that the pedometers could be swung around to clock up steps, and although the teachers warned students against doing this, students felt that the Challenge would be improved if less sensitive pedometers were used.

## 6.2 Facilitators of student engagement

As noted in Section 4.3 above, engagement in the Activity Challenge was high among students. Students who participated in the classroom discussion activity were very positive about their involvement in the Challenge and indicated they would like to participate in it again. Throughout the Challenge students set goals, strove to achieve their personal best and fostered competition with friends.

Teachers reported they boosted physical activity among their students by increasing the number of in-class physical activities, organising specific games and activities such as dance during class and outdoor breaks, timetabling extra sport sessions, organising additional activities during lunchtime such as walking groups that explored the local area, and generally encouraging their students to be active and improve their daily number of steps. Some students indicated they would have liked to be able to take their pedometer home and record their steps out of school hours.

Competition among friends, and between classes in those schools where more than one class participated was identified by students and teachers as a key motivator. Students also indicated that they would have liked more classes in their school to have participated in the Challenge to increase competition. The prizes were also identified as a good incentive that fostered increased physical activity.

*Oh, I thought most of them would like it. I was overwhelmed by engagement. I spoke to a couple of the organisers of the Challenge saying kids were turning up a lot earlier than normal to pick up the pedometers. And just a general comparison, comparing their pedometers to each other and even trying to beat their personal best and stuff. So their enthusiasm was really good.*

*They had goals to achieve and so it was good for them to have something to work towards every day and also too because the other classes were involved with our school they liked the competition and that helped them to strive for more steps every day, to set higher goals.*

*Occasionally, we logged on and they said, 'Check what the [other class is] doing, check where [they] are on the on the ladder'. So they didn't actually care too much about any other school. It was quite nice to compete with each other and that was really what the competition was about for them.*

It was also noted that support from other teachers at the school also fostered the engagement of students in the program.



*We had a lot of support ... other teachers were encouraged to talk to the kids and ask them how many steps they've done. So that promoted a bit more interaction between staff and students as well.*

Some teachers felt that students lost motivation towards the end of the Challenge but others reported that their students maintained or increased motivation in the final week/s. The visit from members of the program implementation team was reported as having a positive influence on student motivation.

*When [program staff] came out, they absolutely loved that. They talked about that for the next two weeks ... We organised three different activities to do while he was there and he just got in and did it with the kids and he was just really good, showing them some soccer skills and, you know, he was awesome and he was just really friendly with the kids. They loved it.*

Visits to the schools by NRL players, or other role models, halfway through the Challenge were also suggested as a way of revitalising engagement and maintaining enthusiasm among students. One less engaged teacher also suggested an option to opt into the Challenge for a shorter time period.

## 6.3 Data entry

In relation to data entry for the class average, teachers entered the daily steps for their students into a spreadsheet at the end of each day to calculate the daily class average. In relation to individual log data, teachers reported that students completed their own logbooks.

Rather than entering data daily into the online platform, the daily class average was entered online generally once or twice per week, depending on time and access to computers. Recording the steps and entering the data online was identified as one of the key challenges of implementing the program and the online entry of individual student data did not occur consistently across the schools or across the duration of the Challenge. For some teachers, finding the time to do this was the key factor, while others noted issues connecting to the internet and internet connection speed.

*The data entry was really hard. Initially kids were writing it in their books and typing their own stuff once a week but that just became not doable. So we devised our own spreadsheet and just recorded it into our own spreadsheet at the end of each day, which just gave us a daily average. I couldn't imagine how any school would make time for it to do that. Even just writing in our books was a 15 minute exercise...*

*If you want to do something extra, it does involve extra work which involves extra time and from the work thing was just trying to find time to squeeze in the admin side of it, the paperwork side of it and logging the class averages and that sometimes was a little bit of a stretch and I was doing it late in the afternoon or on the weekend just to get it done, but I mean that's going to be with anything. If you want to take anything on extra then the extra workload comes along with it.*



A few teachers ended up focusing on just inputting the data for the daily class average, rather than also making time for students to record and enter their individual physical activity data. A couple of classes also stopped moving through the online journey together / watching the videos as a class.

It was also noted that the logbook required a level of literacy and numeracy among the students that posed a challenge for some students, and one of the classes involved in the Challenge.

Feedback on the leader board was positive with teachers and students reporting that they liked tracking their progress and comparing their overall positions, particularly against other classes participating from the same school. However, some concerns were raised around fairness. These included that teachers were able to calculate how much they needed to increase their average steps by to overtake other classes, which was exacerbated by the fact that classes entered their data at different time points. In order to overcome these issues, it was suggested that the leader board not include the average steps for each class but rather only show the position of each class.

## 6.4 The online experience

Feedback from teachers and students indicates that students were highly engaged with the online journey. They enjoyed seeing the avatars and visiting the different destinations.

*That was awesome, the kids loved that. We watched it at the end of each leg, so we watched it as a whole class. And then when we went into the computer room, the kids would watch it again themselves. So they really liked that.*

Some students and teachers felt that the online journey could be improved if it included female tour guides and players from different sports other than the NRL. Some students also indicated a preference for a wider range of clothing options for the individual student avatars. Another suggestion from students for improving the online experience of the program was to include the capacity for students to chat online with other participating students.

Internet connection speed also affected classes tracking their online journey and poor sound quality was also said to impact on the experience of the journey. One teacher also identified some issues with playback of some of the later animations.

*I don't know whether our computer wasn't fast enough at times or something ... but we had a little bit of technical difficulty at times ... we've finished a leg and so we can have a look at the leg and it would start playing, then half way through it would just stop, you'd have to go back and play it again. Or I would click on the people that were participating in the video on the leg and it wouldn't actually give those people, it just had the same sort of people all the time; it wouldn't select the different people.*

*The problem with that was just the sound quality was so atrocious, you couldn't understand what they were saying to you, but they thought it was cool when their avatars sort of came up and walked around, but a lot of the detail you couldn't hear and some of the later ones, the video was all jerky and stuff, it wouldn't play back to*



*us. So the kids liked the fact that their avatar came up, but on the whole the sound quality was really poor and the play back on some of the later ones didn't work.*

It was also reported that there was an issue with using the Challenge iPad application, and, due to limited access to reliable computers at one school, this meant that opportunities for entering individual student data online and following the online journey were limited.

*It didn't work on iPads and the iPads work really well here, like the kids know how to use them and the App didn't work on the iPad. So you had to use computers and just the computers that we had here, we just had a lot of issues with them.*

## 6.5 Support from the program implementation team

Teachers consistently reported that the support they received from the program implementation team was extremely helpful. The support was felt to be well organised and the team were seen to be highly responsive to questions; with responses to queries provided quickly.

*The support for the program was excellent. If ever I sent an email if there was an issue – virtually straight away I'd receive a reply and they were always very helpful which was really good.*

The program implementation team provided the following support to teachers implementing the Challenge:

- Weekly telephone or Skype calls to check on implementation of the program and provide any support needed
- Weekly emails to keep teachers informed of upcoming program components including the destinations, the tour guides and the health and wellbeing messages that could be used in class
- A visit from the implementation team to almost all participating schools
- Access to telephone or email support as needed.

The program implementation team also received fortnightly emails from Azion Wellness which meant that they could follow up with and provide support to teachers who were not inputting class data.

Participating schools received a t-shirt for each student participating in the Challenge. The implementation team felt that the t-shirts were an important component of the Challenge as students had a memento of their participation in the Challenge and that that the shirts provide students with a sense that they were part of a team / a broader program.



# 7. Considerations

Overall the implementation of the Pilot Culture Health Communities Activity Challenge was very successful. This section outlines key considerations emerging from the evaluation in order to both continue and further build on this success for future implementation.

## Competition as a key motivator

In those schools where more than one class participated in the Challenge, the competition among classes was a strong motivator for students:

- Where possible encourage participation from multiple classes in each school
- Explore whether year 3/4 students could be included in the Challenge to further facilitate this
- Continue prize based rewards as this was identified as a good incentive for participation
- Retain the leader board, however consider removing the average daily steps so classes are not able to calculate the average number of steps required to overtake other classes. Average steps could be revealed at the mid-point.

## Engagement and benefits for families and communities

There was limited feedback in relation to the benefits of the Challenge for families of the students involved and at a broader community level. As such, explore opportunities to further integrate the Activity Challenge with the NSW Knockout Health Challenge.

## Pedometers

There were some concerns around consistency and fairness in relation to the use of pedometers across the classes:

- Encourage teachers to allow students to pick up their pedometers as soon as they arrive at school. Suggest strategies for this that limit the burden on teachers
- Source more robust pedometers to limit breakage and resetting during the day. Source pedometers that are less sensitive to other movement such as being swung or shaken
- Provide students with a holder for pedometers (such as an ankle band) to make wearing or carrying the pedometer easier.

## Keeping up motivation

Facilitators were identified that assisted with keeping the students and teachers engaged and motivated throughout the Challenge:

- Continue the level of support provided to teachers by the program implementation team
- Continue class visits from the program implementation team and provide t-shirts and pedometers
- Consider school visits by NRL players or other role models half way through the Challenge

- Consider increasing engagement with healthy eating as part of the Challenge through greater support and focus by program implementation staff, and engaging local health professionals with the participating classes.

### **Online journey**

The online journey was very well received by students and teachers. Suggestions were made to further enhance this success:

- Include female tour guides such as female rugby league players, or other sporting role models through other potential partners such as the W League and Netball Australia
- Consider including a wider range of clothing options for the avatars
- Ensure the iPad App version of the online platform works effectively
- Given classes progressed through the online journey faster than expected, use the results from this pilot to set the benchmark for the steps required to unlock a new destination
- Improve the audio quality of the animations and ensure animations load smoothly on slower internet connections
- Consider including a space for students involved in the Challenge to chat online with students from other classes.

### **Data collection**

Teachers identified that data collection and inputting data was time consuming and missing data was identified for individual student data:

- Remove the collection of minutes of moderate-vigorous physical activity given the extent of missing values and data quality issues
- Explore whether data can be entered into the iPad App or online platform when offline to overcome connectivity issues.

### **Evaluation**

The process of this pilot evaluation also presents opportunities to continue to improve upon the evaluation process:

- Continue to ask for parental/carer consent for participation in the evaluation as part of the Challenge registration form
- While pre-surveys were completed in a two week time period, post-surveys were completed over an eight week period. Consider strategies to encourage the completion of post-surveys in a shorter time period. This may include providing a broader initial window than just the last week of term
- The use of the PAQ-C instrument in this pilot provides the opportunity for these results to be used to validate PAQ-C in NSW and with Aboriginal and/or Torres Strait Islander children
- Specify the format for the provision of individual log data to reduce time spent on reformatting data to prepare for analysis.

## 8. Conclusion

Results from this evaluation indicate that the Culture Health Community Physical Activity Challenge had a positive impact on the physical activity of students during the Challenge period. This is evidenced through increased levels of physical activity, consistently high average daily steps throughout the Challenge with an increase in the last two weeks, and the proportion of students averaging 8,000 or more daily steps increased from baseline. Results in relation to sedentary activity also suggest that the impact of the Challenge may have extended beyond school hours, as screen time decreased for weekend days post-Challenge.

Teachers reported that the Challenge was a great opportunity to motivate students to become more physically active and felt the program was successful in this regard. Further, doing more physical activities, becoming fit and feeling healthier were identified by the students as some of the things they liked best about the Challenge.

Teachers and program implementation staff also noted unintended benefits of the Challenge. Examples were provided of improved attendance and behaviour as some students were more motivated to attend school or organise lunch time activities to record and maximise their steps during school hours. Teachers also felt the Challenge facilitated positive social behaviour by promoting teamwork and encouraging student relationships through planning and participating in activities. Enhanced learning opportunities through the integration of the Activity Challenge into teaching components of the Stage 3 (Years 5 and 6) syllabuses were also noted in the areas of Personal Development, Health and Physical Education (PDHPE), Human Society and Its Environment (HSIE), and mathematics.

The resources already invested into developing program material and the online platform, and the successes of the pilot, provide significant opportunities to continue the Activity Challenge into the future and further increase the number of participating schools and classes.



## 9. References

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# 10. Appendix

## 10.1 Student survey

# CULTURE HEALTH COMMUNITIES ACTIVITY CHALLENGE

- Thank you for being part of this important survey.
- Many students around NSW are helping us by doing this survey.
- The answers are confidential and will be sent to the survey team and no-one else.
- No-one at your school will see your answers.
- The survey is voluntary and you can stop at any time.
- The survey asks about physical activity. This includes sports, dance or games that make you breathe hard, sweat or make your legs feel tired. Like running, tips, skipping, climbing, and others.
- There are no right and wrong answers. Just answer all the questions as accurately as you can.

Today's date: ..... / ..... / 2014  
DAY MONTH

First name: .....

Last name: .....

School Name: ..... School Year: .....

## *First, some questions about you:*

1. What is your date of birth? ..... / ..... / .....  
DAY MONTH YEAR

2. Are you a boy or a girl?

- Boy  
 Girl

3. Are you of Aboriginal or Torres Strait Islander origin?

- Yes, Aboriginal  
 Yes, both Aboriginal and Torres Strait Islander  
 Yes, Torres Strait Islander  
 No  
 I don't know

**Some questions about physical activity:**

**4. Have you done any of the following activities in the past 7 days? If yes, how many times?**  
*(Tick one box per row)*

	No	1 to 2	3 to 4	5 to 6	7 times or more
Skipping	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tag / tips	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rowing/canoeing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Walking for exercise	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bike riding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Running or jogging	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gymnastics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Swimming	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Netball	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rugby league / rugby union	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Australian rules football	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Baseball, softball	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Skateboarding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Scooter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Badminton	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soccer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cricket	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Volleyball	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hockey	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Basketball	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



5. In the last 7 days, what did you do most of the time *at recess*? (Tick one box only)

- Sat down (talking, reading, doing schoolwork)
- Stood around or walked around
- Run or played a little bit
- Ran around or played quite a bit
- Run and played hard most of the time



6. In the last 7 days, what did you normally do *at lunch* (besides eating lunch)?

(Tick one box only)

- Sat down (talking, reading, doing schoolwork)
- Stood around or walked around
- Run or played a little bit
- Ran around or played quite a bit
- Run and played hard most of the time



7. In the last 7 days, during your physical education (PE) classes, how often were you very active (playing hard, running, jumping, throwing)? (Tick one box only)

- I don't do PE
- Hardly ever
- Sometimes
- Quite often
- Always



8. In the last 7 days, on how many days *right after school*, did you do sports, dance, or play games in which you were very active? (Tick one box only)

- None
- 1 time last week
- 2 or 3 times last week
- 4 times last week
- 5 times last week



9. In the last 7 days, on how many *evenings* did you do sports, dance, or play games in which you were very active? (Tick one box only)

- None
- 1 time last week
- 2 or 3 times last week
- 4 or 5 times last week
- 6 or 7 times last week



10. On the *last weekend*, how many times did you do sports, dance, or play games in which you were very active? (Tick one box only)

- None
- 1 time
- 2 or 3 times
- 4 or 5 times
- 6 or more times



11. Which *one* of the following describes you best for the last 7 days? Read all five statements before deciding on the *one* answer that describes you. (Tick one box only)

- All or most of my free time was spent doing things that involve little physical effort
- I sometimes (1 to 2 times last week) did physical things in my free time (e.g. played sports, went running, swimming, bike riding, dance)
- I often (3 to 4 times last week) did physical things in my free time
- I quite often (5 to 6 times last week) did physical things in my free time
- I very often (7 or more times last week) did physical things in my free time

12. Mark how often you did physical activity (like playing sports, games, doing dance, or any other physical activity) for each day last week.

	None	Little bit	Medium	Often	Very Often
Monday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tuesday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wednesday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Thursday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Friday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Saturday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sunday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>







**13. Were you sick last week, or did anything prevent you from doing your normal physical activities? (Tick one box only)**

- Yes
- No

**If yes, what prevented you?** .....

**14. Think about the last week, and write down how long you spent doing the following activities BEFORE and AFTER school each day, and on the weekend. (Write 0 if you did not do the activity)**

	<b>Watching TV?</b> 	<b>Watching DVDs/videos?</b> 	<b>Using a computer for fun?</b> 	<b>Using a smartphone or tablet for fun?</b> 
<b>Monday</b>	<input type="text"/> hours <input type="text"/> <input type="text"/> minutes	<input type="text"/> hours <input type="text"/> <input type="text"/> minutes	<input type="text"/> hours <input type="text"/> <input type="text"/> minutes	<input type="text"/> hours <input type="text"/> <input type="text"/> minutes
<b>Tuesday</b>	<input type="text"/> hours <input type="text"/> <input type="text"/> minutes	<input type="text"/> hours <input type="text"/> <input type="text"/> minutes	<input type="text"/> hours <input type="text"/> <input type="text"/> minutes	<input type="text"/> hours <input type="text"/> <input type="text"/> minutes
<b>Wednesday</b>	<input type="text"/> hours <input type="text"/> <input type="text"/> minutes	<input type="text"/> hours <input type="text"/> <input type="text"/> minutes	<input type="text"/> hours <input type="text"/> <input type="text"/> minutes	<input type="text"/> hours <input type="text"/> <input type="text"/> minutes
<b>Thursday</b>	<input type="text"/> hours <input type="text"/> <input type="text"/> minutes	<input type="text"/> hours <input type="text"/> <input type="text"/> minutes	<input type="text"/> hours <input type="text"/> <input type="text"/> minutes	<input type="text"/> hours <input type="text"/> <input type="text"/> minutes
<b>Friday</b>	<input type="text"/> hours <input type="text"/> <input type="text"/> minutes	<input type="text"/> hours <input type="text"/> <input type="text"/> minutes	<input type="text"/> hours <input type="text"/> <input type="text"/> minutes	<input type="text"/> hours <input type="text"/> <input type="text"/> minutes
<b>Saturday</b>	<input type="text"/> hours <input type="text"/> <input type="text"/> minutes	<input type="text"/> hours <input type="text"/> <input type="text"/> minutes	<input type="text"/> hours <input type="text"/> <input type="text"/> minutes	<input type="text"/> hours <input type="text"/> <input type="text"/> minutes
<b>Sunday</b>	<input type="text"/> hours <input type="text"/> <input type="text"/> minutes	<input type="text"/> hours <input type="text"/> <input type="text"/> minutes	<input type="text"/> hours <input type="text"/> <input type="text"/> minutes	<input type="text"/> hours <input type="text"/> <input type="text"/> minutes

***Thank-you so much for doing the survey.***



## 10.2 Teaching staff discussion guide

### INTRODUCTION

As part of the evaluation of the Activity Challenge, we would like to find out how the Activity Challenge was implemented in participating schools. We are inviting all teachers and Aboriginal Education Assistants who have been involved in the Activity Challenge to participate in the evaluation by being interviewed.

The interview will ask about your experiences implementing the Activity Challenge in your classroom, and the activities your class undertook during the Activity Challenge.

Participation in the evaluation is entirely voluntary, and all your answers are absolutely confidential.

The interview will take about 45 minutes.

If you agree, we would like to audio-record the interview.

Do you have any questions? *(If Yes, answer questions)*

#### **Confirm that the interview will be:**

- Relaxed/informal chat
- No right/wrong answers
- Private and confidential
- Audio-recorded if participant is happy for it to be

Do you have any questions before we begin? *(If Yes, answer questions)*

#### **Consent:**

Do you agree to participate in the interview? Yes/No

Are you happy for the interview to be recorded? Yes/No      If no I will take notes.

### PROGRAM IMPLEMENTATION

1. How have you been involved in the Activity Challenge?
  - How did you first hear about it?
  - Why did you first become involve?
2. Overall, What did you think of the program?
  - Did it meet your expectations?
  - Was there anything about the program that was different to your initial expectations?
3. How did you implement the Activity Challenge in your classroom?
  - How did students record their pedometer counts?
  - How did you use the "online journey"?
  - Did you link the Activity Challenge to other classroom activities? If so, what activities? How well did this work and why?





- Did you have any concerns about implementing the Activity Challenge with your class?
4. How did your class respond to the Activity Challenge? Do you think the Challenge met their expectations?
    - Did students need much motivation to become involved?
    - Were some students more motivated than others?
    - Was it difficult to maintain motivation throughout the term?
    - How did you motivate your students to stay involved?
  5. What aspects of the Activity Challenge worked well?
    - Why do you think these aspects worked well?
  6. What aspects of the Activity Challenge didn't work well?
    - Why do you think these aspects did not work as well?
    - What would overcome this in the future? – i.e. probe for solutions to design and/or implementation
  7. Did the Challenge have any positive impacts for you or your students?
    - Probe for social or cognitive (e.g. more engaged in learning) impacts as well as physical impacts.
    - Did the Challenge have any positive impacts beyond the students themselves? Probe for impacts across the rest of the school, among other teaching staff, families, community.
  8. Did the Challenge have any negative impacts for you or your students?
    - Probe for social or cognitive (e.g. more engaged in learning) impacts as well as physical impacts.
    - Did the Challenge have any negative impacts beyond the students themselves? Probe for impacts across the rest of the school, among other teaching staff, families, community.
  9. What support did you have to implement the Challenge?
    - What support did you find particularly helpful in implementing the Challenge?
  10. Is there any additional support that you would you have liked to have had in implementing the Challenge?
  11. Do you know if your school is part of the Premiers Sporting Challenge? If so, Has your school adopted the Premiers Sporting Challenge because of this program?
  12. Can you suggest ways to improve the program in future?
  13. Would you run the program in your class again in the future? Why or why not?
    - If you were to do it again is there anything you would do differently?
    - Is there anything you would make sure you did the same?
  14. Would you recommend the Challenge to other educators? Why or why not?
  15. Is there anything else you would like to add? **Thank you and close**



## 10.3 Classroom discussion guide

Evaluation officer explains who they are, why they are here, what will happen in the classroom discussion activity

What did you like best about the Activity Challenge? What is something else you liked about the Activity Challenge?

What was it like wearing a pedometer?

- *PROMPTS: Was it hard to use? Did you wear it every day? Did you lose it? Was it annoying to have on all the time at school?*
- *POTENTIAL SHOW OF HANDS QUESTIONS (if needed):*
- *Who wore it every day?*
- *Was it annoying to have to wear the pedometer all the time?*

Did you do any special activities to get more steps on your pedometer?

*PROMPTS: Did you walk or play more than usual so you would get more steps? Did you shake your pedometer? Did you compete with your friends to see who could get the most steps?*

Did you use the website to record your steps? Why/why not?

Did you like the Online Journey? What did you like best about it? Was it hard to use?

How often did you record your steps online? Was it everyday or once or twice a week?

- *POTENTIAL SHOW OF HANDS QUESTION (if needed):*
- *Who liked the online journey?*

What was the worst part about doing the Activity Challenge? What is something else you didn't like about the Activity Challenge?

If you were in charge of the Activity Challenge, what would you change? Do you have any suggestions to make it better next time?

If the Activity Challenge happened again next year, would you do it again? *(Raise hands if you would do it again)*

**Thank you and close**

