DENVER MUSEUM OF NATURE & SCIENCE

Passport to Health Year 3 Evaluation Report

Outcome Evaluation

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By:

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Executive Summary

In spring 2009, the Denver Museum of Nature & Science (Museum) contracted with JVA Consulting, LLC (JVA) to conduct a comprehensive process and outcome evaluation of the Passport to Health (P2H) program. The Museum designed P2H, originally a three-year program funded by the Colorado Health Foundation (the Foundation), to improve health outcomes for fifth-grade students as well as their families and teachers throughout the Denver metro area.

Passport to Health has seven components, designed to complement each other and help the Museum achieve its stated program goals. The seven components include:

- **Teacher professional development,** designed to improve teachers' ability to teach health science
- **Fitness Physiology**, a class hosted by each school to introduce students to body systems and provide them with the background knowledge needed for the onsite class at the Museum
- **ExerScience,** the onsite Museum class that helps students explore their own body, how it works and its capabilities
- **Family Fit Fest,** an event hosted at the school that seeks to show families that environment, genetics and choices help shape health
- **Family Health Day,** hosted at the Museum, which seeks to teach families that physical activity and nutrition choices determine health and success
- **Student Journal**, developed to provide teachers with the tools they need for implementation of P2H and for the integration of health science content into lessons
- **Family membership,** which seeks to expose families to the Museum

In summer 2010, JVA submitted the Year 1 process and outcome evaluation reports, which explored the first full year of implementation of the P2H program. These reports were used by the Museum to refine and revisit program activities, and to celebrate the accomplishments of the program. This report provides the findings and analysis of the 2010–2011 outcome evaluation.

Methodology

Throughout the 2010–2011 program year, JVA conducted a mixed-methods evaluation to assess progress toward achieving program outcomes. The data collection methods that were employed include: student pre- and post-surveys, student focus groups, teacher pre- and post-surveys, teacher interviews, student Journal observations, Journal user survey, parent post-surveys, parent interviews, and Focus Families. Detailed methodology can be found in the body of this report and in Appendices I–IV.

In order to structure this evaluation, JVA hoped to answer the following four questions:

- *Did the program increase health science content instruction and knowledge?*
- *Did the program increase recognition of the value of physical activity, healthy foods and healthy lifestyles?*
- *Did the program encourage students to advocate for healthy changes at home and help families make those changes?*
- *Did the program increase teachers' use of Museum resources?*

While responses to each question can be found in the body of this report, triangulation of data collection methods revealed the following overall findings and recommendations:

Did the program increase health science content instruction and knowledge?

Students

To answer this question for student outcomes, the evaluation assessed the following indicators: students' attitudes toward learning science, students' ability to correctly identify and know the purpose of the circulatory, respiratory and muscular-skeletal systems, and students' ability to demonstrate understanding of the connection between systems.

As illustrated by findings from student focus groups, student surveys and teacher interviews, students were better able to identify healthy food and lifestyle choices, and the hands on and interesting content of P2H helped them learn more science in 2010–2011 than in the previous school year. Further, the student surveys, student focus groups, teacher surveys and teacher interviews revealed that students who participated in P2H were better able to identify and understand the purpose of body systems than other students their age, and that participants were better able to understand how physical fitness impacts body systems and health.

Teachers

To measure this outcome for teachers, the evaluation assessed the following indicators: teachers' attitudes toward teaching health science, teachers' ability to integrate health science concepts into their classroom, and teachers' confidence in their ability to teach health science.

As illustrated by teacher surveys and interviews, P2H teachers were more comfortable teaching health science this year than in previous years, and P2H provided teachers with new, creative tools to help them reinforce their focus on health science.

Further, despite increased comfort and new, creative tools, teacher surveys, teacher interviews and the Journal user survey indicated that teachers had a challenging time integrating P2H materials into their classroom. Like in Year 1, teachers were more likely to integrate nutrition than physical fitness into science lessons, and were also more likely to utilize Journal pages that were directly related to P2H, rather than those that were math- or literacy-focused.

Finally, and unlike in Year 1, Year 2 teacher surveys and interviews revealed that Year 2 P2H teachers were less likely to increase the number of hours they spent teaching science curriculum and that while schools were supportive of P2H programming, teachers reported that school leaders provided less direct and active support in Year 2. Teacher interviews demonstrated that while school leaders were supportive of the P2H program, they were less actively involved in Year 2 than in Year 1 programming.

Did the program increase recognition of the value of physical activity, healthy foods and healthy lifestyles?

Students

To measure this student outcome, the evaluation assessed the following indicators: students' understanding of the connection between physical activity and body systems, students' value and interest in recreational and organized physical activity, and students' attitude toward physical activities.

Like in Year 1, Year 2 teacher surveys revealed that students who participated in P2H were better able to identify the connections between body systems and physical activity than other students their age.

Further, and again mirroring Year 1 findings, Year 2 student surveys, student focus groups, Family Health Day interviews and family surveys illustrated that students increased the amount of physical activity they engaged in and have a better understanding of the value of physical activity as a result of P2H.

Teachers

To measure this teacher outcome, the following indicators were assessed: teachers' understanding of the connection between physical activity and body systems, teachers' awareness of physical activities students generally participate in, teachers' awareness of the physical activities available to students, and teachers' encouragement of physical activities inside and outside the classroom.

Teacher surveys demonstrated that as a result of P2H, teachers' knowledge of physical activities and resources available to students outside of school increased dramatically, and Year 2 teachers were more likely to encourage their students to participate in physical activity both in and outside of school.

Families

To measure this family outcome, the following indicators were assessed: families' attitudes toward nutrition and physical activity, parents' understanding of nutrition and physical activity and how they link to health, and the number of times parents engage in conversations with their children about healthy lifestyles.

As illustrated by family surveys and Family Health Day interviews, families report making changes in the way their family approaches nutrition or physical fitness, and P2H is increasing families' awareness around health and lifestyle choices.

Further, and to a greater extent than in Year 1, Year 2 parent surveys and Family Health Day interviews demonstrated that families are likely to talk at home about health, nutrition and physical activity.

Did the program encourage students to advocate for healthy changes at home and help families make those changes?

Students

To measure this student outcome, the following indicators were assessed: students' ability to identify healthy food options, students' requests for new, healthy food options, students' encouragement and discussion of physical activity and healthy lifestyles at home, and resources students bring to their families.

According to findings from student surveys and student focus groups, students' ability to identify healthy foods increased significantly, and students also continue to be able to ask and respond to critical thinking questions about food choices. Additionally, student focus groups, teacher interviews, parent surveys and Family Health Day interviews revealed somewhat conflicting information about whether or not students are advocating for healthier food choices at home. While focus group and interview respondents indicated that students are talking to their families

more, post-survey results demonstrate different results. All this considered, teachers did not report noticeable changes in nutrition or physical fitness habits of their students.

Families

To measure this family outcome, the following indicators were assessed: family members' participation in P2H activities, changes in the type of food parents purchase and serve, changes in the type of recreation and organized activities parents encourage, new physical activities tried/encouraged, health club and recreation center memberships/awareness, park visits/awareness, and attitudes toward physical activity and nutrition.

Based on the tracking of output data collected by the Museum, while family participation in P2H activities was still lower in Year 2 than the Museum hoped, teacher interviews revealed that participation was higher this year than in Year 1 and families seemed more engaged, overall.

According to Family Health Day interviews, and family and student surveys, families are noticing positive changes as a result of P2H, are eating more vegetables and less sugar, are changing the foods they buy, and have increased the amount of physical activity they do.

Finally, based on family post-surveys and Family Health Day interviews, awareness of local parks and recreation centers increased slightly, however, much like in Year 1, the great majority of P2H families already knew of these places. Further, nearly all family post-survey respondents visited the Museum, parks and recreation centers the same amount this year as last year.

Did the program increase teachers' use of Museum resources?

Teachers

To measure this teacher outcome, the following indicators were assessed: teachers' knowledge of the Museum's available resources, teachers' use of P2H resources and teachers' use of non-P2H Museum resources.

Based on teacher interviews and teacher surveys, while those teachers who did utilize Museum resources had positive feedback, strict district guidelines, limited time to prepare and integrate new materials, and a lack of exposure to materials prior to the start of programming made Museum resources somewhat challenging to access and utilize.

Recommendations

Based on the findings and conclusions of this report, JVA presents the following recommendations or suggested areas for growth:

- For the second year, the **Focus Families component** was the least successful evaluation component. With the support of the internal Museum researcher who will be exploring and further evaluating family engagement in P2H, *the Focus Families component could be eliminated and replaced by a more effective and efficient evaluative tool.*

- Based on feedback from teachers, there is a desire to make the **July Teacher Workshop** more of a hands-on exploration of the Journal and other activities teachers can implement in their classroom. *For the July Teacher Workshop, the Museum could consider spending less time on logistics and Expedition Health, and more time*

demonstrating the Journal and specific activities that are not facilitated by Museum educators.

- Although teachers recognized the value of the **student Journal**, and that it contained math and literacy activities, many said they didn't have time to learn the activities and integrate them effectively into non-health science lessons. *The Museum could consider dividing the Journal more deliberately into activities tied directly to P2H components, those used for math or literacy, and others.*

- Based on feedback from multiple sources, **coupling P2H events** with other scheduled school events proved to be an effective way to increase family engagement and participation. Considering this, *the Museum should continue to schedule P2H events in partnership with other school events, in an effort to continue to increase engagement and participation, and to further involve the school community in P2H programming.*

- According to teachers and Museum program staff, when **teachers are actively engaged** in programming, it runs more smoothly on the ground. Additionally, in their words of wisdom to new P2H teachers, returning teachers said that it's important to show your students that you are excited about and engaged with the program. *The Museum should continue to find ways to actively engage teachers in all aspects of programming—from providing free memberships, to scheduling and completion of components.*

Background

In spring 2009, the Denver Museum of Nature & Science (the Museum) opened a new health science exhibit, *Expedition Health*, which stems from the Museum's new Health Science Initiative and replaces the *Hall of Life* exhibit that was an integral part of the Museum for many years. To add a key education component to complement this exhibit, the Colorado Health Foundation (the Foundation) provided a generous grant to fund the development and implementation of the Passport to Health (P2H) program. P2H was originally a three-year program with one year for design and two years for implementation. However, a no-cost extension has allowed for three years of implementation. The Museum designed the program to help improve health outcomes for fifth-grade students as well as their families and teachers at 30 low-income schools in the Denver metro area.

P2H has several components, each designed to complement and support the overall program outcomes of improving child and family health and increasing commitments to healthy lifestyles:

Table 1: Components of the Passport to Health Program

Program Component	**Description**	**Intended Audience**	**Purpose**	**Outputs**
Teacher Professional Development • *Teacher Workshop* • *Online guides* • *Online Course*	A workshop to introduce teachers to P2H and the online guides, and provide training on health science content and incorporating P2H into the classroom	Teachers	Improve teachers' ability to teach health science • Achieve buy-in • Improve content knowledge • Provide class resources	At least 60 teachers (two from each P2H school) participate in the Teacher Workshop The P2H online guide is completed and available online by summer 2009 The online guide is utilized by each P2H core team teacher At least 10 teachers complete the Online Course
Fitness Physiology (classroom pre–visit)	45-minute class delivered at the school to each P2H class before visiting the Museum	Students Teachers*	Introduce students to body systems so they have the background knowledge needed for the onsite class	2,300 students per year participate
ExerScience (class held at Museum)	1.5 hours, station-based, hands-on lab class and *Expedition Health* visit	Students Teachers*	Help students explore their own body, the way it works and its capabilities	2,300 students per year participate Adult family members chaperone museum visit
Family Fit Fest (at school)	A night "carnival" structured event at the individual school	Students and families Teachers*	Show families that environment, genetics, and choices all shape health	Family Health Nights at all 30 P2H schools; draw 2,000 participants annually
Family Health Day (at the Museum)	Daylong field trip where families and students visit the Museum	Students and families Teachers*	Teach families that physical activity and nutrition choices determine health and success	Five Family Health Days at the Museum will draw 2,500 participants annually

Program Component	Description	Intended Audience	Purpose	Outputs
Student Journal	A notebook to complement P2H	Students Teachers	To provide teachers with tools for implementing health science in lessons, including the integration of health science into math and literacy lessons	At least 75% of students use the P2H Journal and other engagement tools
Membership Program	All P2H students' families and P2H teachers are offered a free, one-year Museum membership	Students and families Teachers	Expose families to the Museum Provide an incentive to teachers to participate in the program	Memberships offered to all P2H families are redeemed by 80% of families annually

**Not the intended audience but recieves indirect treatment through participation*

In total, P2H was implemented in 29 schools, in four districts in the Denver metro area. More specifically, participating schools included:

- Four Adams 12 Five Star Schools (Adams 12)
- Eight Adams-Arapahoe Public Schools (APS)
- 15 Denver Public Schools (DPS)
- Two Jefferson County Public Schools (Jeffco)

Within these schools, P2H partnered with 94 core teachers[1] to provide programming in 82 fifth-grade classrooms and four, fourth-grade classrooms. Further, the following table illustrates final participation counts from the Museum, which demonstrate that attendance and participation in P2H activities increased significantly this year when compared with the 2009–2010 implementation year:

Program Component	YEAR 1 2009–2010	YEAR 2 2010–2011
Students participating in the *Fitness Physiology* classroom visit	1,807	2,184
Students attending *ExerScience* at the Museum	1,703	2,067
Teachers and adult chaperones attending *ExerScience* at the Museum	330	326
Families, students and teachers participating in *Family Fit Fests* held at schools	1,517	2,364
People (not including school personnel) attending the *Family Health Days* hosted at the Museum	979	1,233

[1] Initially, there were 100 self-identified core P2H teachers, however, with the withdrawal of two P2H schools, that number decreased to 94. This report reflects only those 94 self-identified core teachers who engaged with P2H for the full program year.

Program Component	YEAR 1 2009–2010	YEAR 2 2010–2011
Number of *family memberships* redeemed by P2H families	646	1,183[2]

As the table above shows, student participation and attendance at all P2H components increased in Year 2, and adult, teacher and family participation also increased, with the exception of teacher and adult participation in the *ExerScience* program at the Museum. While the number of participating schools increased from 27 in Year 1, to 29 schools in Year 2, which may have impacted overall student participation, family participation increased dramatically in Year 2, which was a goal of the Museum when the program year began.

Intended outcomes

Through the P2H program, the Museum hopes to achieve the following outcomes:

Table 2: Intended Outcomes of Passport to Health

Students Will	Parents Will	Teachers Will	Schools Will
1: Increase their health science content knowledge 2: Recognize the value of physical activity and its contributions to a healthy lifestyle 3: Advocate for healthy options and behaviors within their family units	1: Show better understanding of the importance of a healthy lifestyle for the whole family 2: Report making changes that support the whole family eating better and moving more	1: Increase their health science content knowledge 2: Better understand the implications of the benefits from student involvement in physical activities 3: Increase use of the Museum's resources with their students	1: Increase health science education in classroom instruction

Over the course of the 2010–2011 implementation year, each of these nine outcomes was measured using multiple and mixed methods. To best assess progress being made toward each of these outcomes, this report hopes to answer the following four evaluation questions:

- *Did the program increase health science content instruction and knowledge?*
- *Did the program increase recognition of the value of physical activity, healthy foods and healthy lifestyles?*
- *Did the program encourage students to advocate for healthy changes at home and help families make those changes?*
- *Did the program increase teachers' use of Museum resources?*

[2] According to the *Passport to Health Membership Summary Report,* there were 1,186 memberships redeemed by P2H families. However, one membership was redeemed by a family at Stedman and another by a family at Wyatt-Edison, and while both schools were enrolled in and withdrew from P2H for the 2009–2010 school year, neither participated in the 2010–2011 program year. Further, one membership was redeemed by a family at an Unknown school. As such, these three memberships were removed from the final count.

Link to Colorado Health Foundation outcomes

The P2H program was designed, in part, to support and complement the goals and objectives of the Colorado Health Foundation (the Foundation). The mission of the Foundation is *to improve the health and health care of Coloradans by increasing access to quality health care and encouraging healthy lifestyle choices*. To meet this mission, the Foundation funds programs that have the potential to show measurable results in meeting specific objectives related to healthy living, health coverage and health care. Within the healthy living realm, the Foundation seeks to develop healthy schools and promote healthy communities. P2H uses the Coordinated School Health Program model to provide Colorado families in the Denver metro area with an educational program that aims to help improve healthy living outcomes. Specifically, P2H has the potential to provide measurable progress toward the following healthy living objectives:

1. Increase the number of children and adults who engage in moderate or vigorous physical activity
2. Increase the number of children and adults who eat adequate amounts of fruits and vegetables daily
3. Increase the number of parents who are educated on child development, nutrition and preventive health care

P2H is one of many programs that interacts with and has the potential to affect the lives of students, families, teachers and schools in the Denver metro area. As childhood obesity and child and family health continue to move into the forefront of public and private work, having programs like P2H that align with district and state curricula and that involve families on many levels, will be increasingly important. P2H has the potential to continue to positively impact the Foundations' outcomes and mission.

Program evaluation and report structure

In spring 2009, the Museum contracted with JVA Consulting, LLC (JVA) to conduct a comprehensive evaluation of P2H, including two key components: a process evaluation to examine the program design and implementation, and an outcomes evaluation to measure the program's abilities to meet its overall objectives. JVA is utilizing multiple methods to collect both quantitative and qualitative data that will provide the Museum, the Foundation and other stakeholders with important insight into the progress of the program and its outcomes. The evaluation and its ongoing findings will enable the Museum to make informed decisions in program refinement and track ongoing program accomplishments.

This evaluation report provides a summation of the 2010–2011 P2H program implementation year and progress made toward achieving program outcomes. The purpose of this report is to describe the findings of the outcome evaluation, to determine the extent to which the program is reaching its desired aims and to explore feedback from students, teachers and parents.

The format of the report is as follows:

Section I contains a synthesis of all data collection methods and attempts to paint a holistic picture of the implementation year by triangulating data to demonstrate findings from all relevant participants. Analysis in Section I is conducted based on the four, overarching evaluation questions and contains findings from all relevant stakeholder groups. It lists indicators assessed and contains gray boxes throughout, highlighting key findings and conclusions. Where appropriate, graphs and charts are included to further illustrate findings.

Following Section I, readers will find a series of Appendices that provide in-depth and detailed analysis and interpretation of each data stakeholder group or program component. These Appendices provide analysis and findings from each data collection method used for the given stakeholder group or program component. For additional information or more detailed methodologies, please refer to Appendices I–IV.

External forces and analysis challenges

While this report seeks to answer the four questions listed above, it is important to recognize some external forces and challenges that may have affected the evaluation findings. As reflected in previous baseline reports, many of the P2H program schools are also participating in state- or district-run health, health science or nutrition programs. Considering high levels of participation in programs that complement and reinforce P2H, it is challenging to differentiate between outcomes attributable to P2H and those that may be due to engagement in multiple health, health science or nutrition programs.

In addition to these external forces, P2H hopes to impact students, families, teachers and schools in profound ways, mostly emphasizing long-term changes in actions and conditions. Because these outcomes are long-term, evaluation after two years of programming may not reflect the changes. Because long-term outcomes cannot be assessed at this stage in the evaluation, this report focuses on more immediate and intermediate outcomes, with the expectation that if these short- and medium-term outcomes are achieved, the achievement of long-term outcomes is inevitable.

Further, because P2H is attempting to integrate fully into a pre-determined district or state-curriculum, teachers and program staff face implementation challenges. Numerous teachers mentioned that it was difficult to find ways to incorporate P2H programming into current curriculum either because of their lack of familiarity and comfort with the P2H program or because they felt the curriculum did not align well enough with district curriculum. As a result, it is likely that classrooms received varying levels of programming, depending on the ability of each teacher to successfully integrate P2H program components. Finding ways to better integrate P2H with district and state standards will continue to be a challenge for the P2H program team, especially as Colorado continues to integrate and move toward using all Common Core Standards. If changes in state standards do occur, it will be important for the Museum to reconsider how to align all school-based programs, including P2H, with these new standards.

Finally, because P2H specifically targeted schools with high percentages of students who were eligible to receive free- or reduced-price lunch, P2H families may have fewer resources with which to make lifestyle changes. Despite potential attitudinal changes, it is likely that P2H families may face more significant barriers when trying to implement change than families with greater resources. Providing information about healthy food options and opportunities for physical activity in the areas surrounding partner schools could help to alleviate some of the barriers faced by P2H families.

Methodology

JVA conducted a mixed-methods evaluation, combining quantitative and qualitative data collection and analysis. While more detailed methodological information can be found in Appendices I–IV, the following nine primary components of the outcomes evaluation are described below:

- Student pre- and post-surveys
- Student focus groups
- Teacher pre- and post-surveys
- Teacher individual interviews
- Journal observations
- Journal user survey
- Parent/family interviews
- Parent/family post-surveys
- Focus families interviews

Students

Pre- and post-surveys

JVA conducted pre- and post-surveys with P2H students to better understand their attitudes toward learning science, their knowledge of health science content, their ability to recognize the value of physical activity and eating healthy, and the extent to which they discuss healthy eating and physical activity with their families. JVA collected 999[3] pre-surveys from students in 23 participating schools throughout the fall and winter of 2010. JVA hoped to conduct pre-surveys in all P2H partner schools, however, due to scheduling problems, six schools did not participate in pre-surveys. Post-surveys were collected from 851 students in 22 schools participating in the P2H program in spring 2011 once schools had completed all program components including Family Fit Fest and Family Health Day. Despite JVA's best outreach efforts, one school that participated in pre-surveys did not schedule post-surveys in time to be conducted before the end of the school year.

Pre- and post-surveys were matched by student in order to analyze their responses before and after the P2H intervention. Both pre- and post-surveys were assigned a unique identifier for each student consisting of the student's self-identified date of birth, the JVA-assigned school code and the JVA-assigned teacher code. After matching pre- and post-surveys using the student identification system, there were 604 matched pre- and post-surveys.

Focus groups

Five focus groups were conducted in spring 2011 with students who had participated in the P2H program, to learn their perceptions of the program and how it influenced their decisions to eat healthy and participate in physical activity. The five participating schools were: Montview (APS), Federal Heights (Adams 12), Eiber (JeffCo), Parklane (APS) and KIPP Sunshine Peak Academy (DPS). A sixth school was scheduled for a focus group, however consent forms were not sent home to parents/guardians and as such, the focus group was cancelled. JVA attempted to reschedule the focus group, but it was too late in the school year and the group could not be rescheduled. Schools were chosen at random and JVA used two schools from both DPS[4] and

[3] Although 999 pre-surveys and 851 post-surveys were collected, this report will focus on the 918 pre-surveys and 770 post-surveys conducted in fifth-grade classes. Federal Heights Elementary School is in the process of shifting its science curriculum, and as a result, both fourth- and fifth-grade students participated in Passport to Health. Fourth-grade students were surveyed, in order to determine the efficacy of evaluation tools with that age group. Their results, however, will not be included in the overall report.

[4] The focus group that was cancelled would have represented the second DPS school.

APS because these two districts had higher levels of participation in P2H than Jeffco or Adams 12. Student participants were also chosen at random. All of the students for whom JVA received parental informed consent were put into an envelope and names were chosen from each participating classroom, for a total of six to nine participants for each school focus group.

Teachers

Pre- and post-surveys

JVA administered pre-surveys to teachers in the fall and winter of 2010. A total of 57 pre-surveys were collected from teachers at 22 schools. JVA also administered a post-survey to the same teachers in spring of 2011, once all program components had been completed, and collected a total of 41 post-surveys from teachers at 17 schools. The survey was designed to gather pre- and post-data from the same individuals with the intent of conducting statistical analysis to determine the extent and significance of change in behavior and knowledge. While the Year 1 report was not able to compare pre- and post-survey results due to a low number of matching surveys, there was a sufficient number of matching surveys in Year 2, and as such, this report reflects the pre-post changes occurring among the same teachers.

Individual interviews

In order to provide more detailed feedback and recommendations to the Museum, JVA conducted individual telephone interviews with 12 P2H teachers from four districts in May and June 2011.

Journals

Journal observations

To better understand and evaluate the use and effectiveness of the P2H student Journal and to determine whether or not it increased health science content instruction and knowledge, JVA utilized two evaluative tools: an observation form and a Journal user survey administered with P2H teachers. The Journal observation form was designed to allow JVA associates to evaluate the number of activities used in student Journals and the degree to which each activity was completed. Journal observations were conducted in the spring of 2011, at the same time that student and teacher post-surveys were administered. While JVA intended to administer the Journal observation form in all classrooms in all P2H schools, due to timing and logistics, many teachers had already encouraged their students to take their Journals home, resulting in Journal observations taking place in only nine schools (31%). A total of 37 observations were conducted.

Journal user survey

The second tool, the Journal user survey, was administered with teachers along with the teacher and student post-surveys at the end of the program year. This survey allowed teachers to indicate which activities they used with their students and encouraged teachers to provide the Museum with general feedback about the Journal and its effectiveness. Rather than ask questions about all of the Journal activities, the Journal user survey asked only about that activities that were not facilitated by Museum staff or educators. In total, there were 15 activities listed on the user survey, and a copy of the Journal was available to teachers who wanted or needed to cross-reference. While Journal user surveys were provided to all P2H teachers, 41 completed the survey for a response rate of 41%.

Parents and families

Interviews

In order to evaluate whether the program increased families' recognition of the value of healthy lifestyles and whether students advocated for healthy changes at home, JVA utilized three evaluation methods. First, JVA associates attended four Family Health Days at the Museum and conducted 132 interviews with parents and families (which included extended relatives living at home) of P2H participants. The interview asked respondents to reflect on changes they witnessed in their children or families as a result of P2H. Questions focused on changes in physical activity, nutrition and food and whether or not their child was bringing information about P2H home with them to share with their families. Three schools were not able to participate in Family Health Days because of scheduling problems. Families from 96% of participating schools (*n* = 25) participated in interviews, which were conducted in English and Spanish.

Post-surveys

Post-surveys were sent home to the families of P2H participants in the spring of 2011; 282 of these surveys were returned. The survey asked questions similar to those asked in the interview and also included questions about whether or not families visited the Museum, local parks and/or recreation centers during the year. Surveys were conducted in English and Spanish and responses were collected from 48% of schools (*n* = 14).

Focus Families

JVA measured and evaluated the effect of the P2H program on families in part through the Focus Families component. JVA worked with teachers and family liaisons at P2H schools to attempt to identify six families to participate in Focus Families, which included an initial assessment of their family health and fitness habits, as well as monthly phone interviews with a JVA associate to track and evaluate changes. Despite recruitment and retention efforts, there was only one family remaining in the Focus Families component at the conclusion of the 2010–2011 program year. Much like in Year 1, despite JVA's outreach efforts, which included attempting communication through email, mail and phone, and continuing to try to connect with families through teachers and family liaisons, high mobility rates in partner districts and difficulties with communication, which included disconnected telephone numbers and incorrect email addresses, made sustained communication with families difficult.

Study limitations

These methods were selected to obtain broad information about the implementation of P2H. It is important to note, however, that there are limitations to each. While this section will present general limitations faced during the evaluation, detailed information about the limitations associated with each data collection method can be found in Appendices I–IV.

In general, the primary limitations encountered during the evaluation included timing and language/literacy.

Language and literacy may have had the greatest impact on the evaluation for students. P2H participant schools have moderate to high numbers of students who are English Language Learners (ELL) and students who do not read at grade level. The student surveys were piloted among groups of students with similar demographic make-ups in order to reduce confusion, and were available in both English and Spanish. Additionally, when necessary, survey administrators read the survey aloud to students who needed literacy support. While these efforts increased response rates and accuracy, there may still have been response bias or error as a result.

Section I: Analysis and Findings

The full analysis of each data collection method for the various populations is presented in the appendices. Here, the data are summarized and triangulated to determine overall findings of the program. Results are summarized by each of the four research questions, and the indicators to help understand whether the outcomes were achieved are listed for each population group.

Did the program increase health science content instruction and knowledge?

Students

To better understand whether students' knowledge of health science was increased, the following indicators were assessed:

- *Students' attitudes toward learning science*
- *Students' ability to correctly identify and know the purpose of the circulatory, respiratory and muscular-skeletal systems*
- *Students' ability to demonstrate understanding of the connection between systems*

Students' attitudes toward learning science

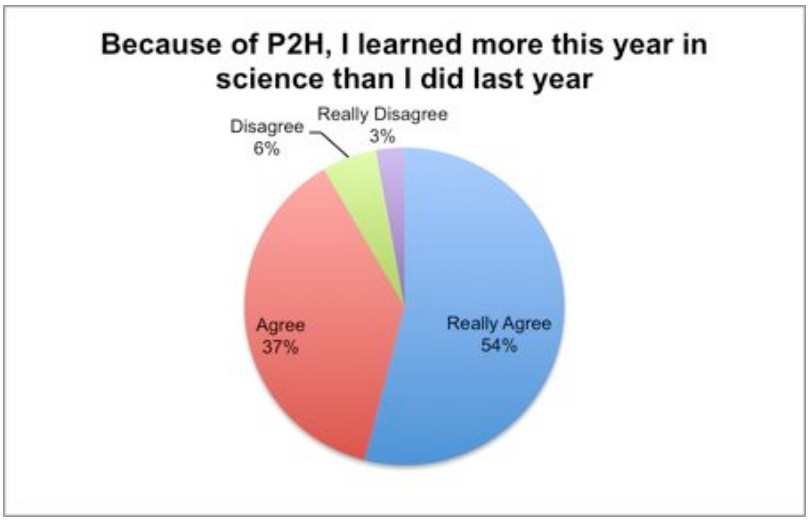
As illustrated by findings from student focus groups, student surveys and teacher interviews, students were better able to identify healthy food and lifestyle choices, and the hands-on and interesting content of P2H helped them learn more science in 2010–2011 than in the previous school year.

Student surveys, student focus groups and teacher interviews where used to determine if there was an attitudinal shift in students participating in P2H. For example, in focus groups, students were asked if participation in P2H had affected the way they thought about science. Much like in Year 1, students participating in Year 2 focus groups responded that P2H had a positive effect on the way they thought about science. Students said they found P2H information to be interesting and that they enjoyed learning about things, like how their bodies worked. Further, students in both Years 1 and 2 commented on the experiential nature of P2H, saying that the hands-on experience of P2H made learning more interesting and engaging.

The student surveys also provided information to help understand student attitudes. On the post-survey, students were asked whether, as a result of P2H, they learned more in science this year than they did last year. As illustrated by Figure 1, 91% of students Agreed or Really Agreed that because of P2H, they learned more this year in science than they did last year. This is a sizeable improvement from Year 1, when 77% of students answered Yes to the question: *because of P2H, I learned more this year in science than I did last year*.[5]

[5] It is important to note here that the pre-survey scale changed from a three-point scale in Year 1 to a four-point scale in Year 2 and as such, caution should be taken when comparing Year 1 and Year 2 data.

Figure 1: Role of Passport to Health in Learning Science



Additionally, on pre- and post-surveys, students were asked if they thought that science helped them understand more about themselves. On a four-point scale where 1 = Really Disagree, 2 = Disagree, 3 = Agree, and 4 = Really Agree, analysis revealed an increase in student perceptions from the pre-survey, where the mean score was 3.35, to the post-survey, where the mean was 3.39. While in Year 1, a similar increase demonstrated statistical significance; the increase in Year 2 is not statistically significant. [6]

Finally, teachers were asked through interviews whether P2H affected the way their students approached science. Overall, 75% of interview respondents indicated that their students were more interested in science, the human body or being healthy and that P2H had helped students think about science in a different way.

Students' ability to correctly identify body systems and understand the connections between them

The student surveys, student focus groups, teacher surveys and teacher interviews revealed that students who participated in P2H were better able to identify and understand the purpose of body systems than other students their age, and that participants better understand how physical fitness impacts body systems and health.

The students' ability to identify the purpose of body systems and the connections between them was measured through multiple methods, which included the student pre- and post-surveys, the student focus groups, the teacher post-survey, and the teacher interviews. Through data collected from both students and teachers, it is clear that students increased their ability to understand the body systems and the connections between them.

[6] Where there were matched pre- and post-surveys, paired-sample t-tests were conducted, which are used to compare the mean scores of the same groups of people at two points in time. These tests are used to determine if the differences between the pre- and post-survey are statistically significant, and that with an alpha of .05, you can be 95% confident that the difference is not due to chance. Finally, with these tests, a p-value shows whether there is a statistically significant difference, and the effect size suggests how meaningful that difference is. For more detailed information about this statistic and methodology, see Appendix I, Passport to Health Year 3 Student Report.

To better understand the students' level of knowledge, they were asked a series of questions about the body systems on the pre- and post-surveys.

The percentage of students who correctly answered questions about the body and body systems increased from the pre- to post-survey. As illustrated by Table 3, which details the percentage of matched pre- and post-survey respondents who correctly answered each question, a higher percentage of post-survey respondents answered correctly, with one question returning statistically significant results.

Table 3: Students' Knowledge of Body Systems

Question	Pre-survey % correct	Post-survey % correct
Look at this picture, which shows some of the organs that can be found inside the human body. What is the main job of the organ with the arrow pointing to it?	69.1%	71.4%
In your body, what two organs work together to make sure that oxygen gets to all the other organs of your body?	69.8%	70.9%
*** Physical activity has an impact on which of the following body systems?*	47.2%	55.7%

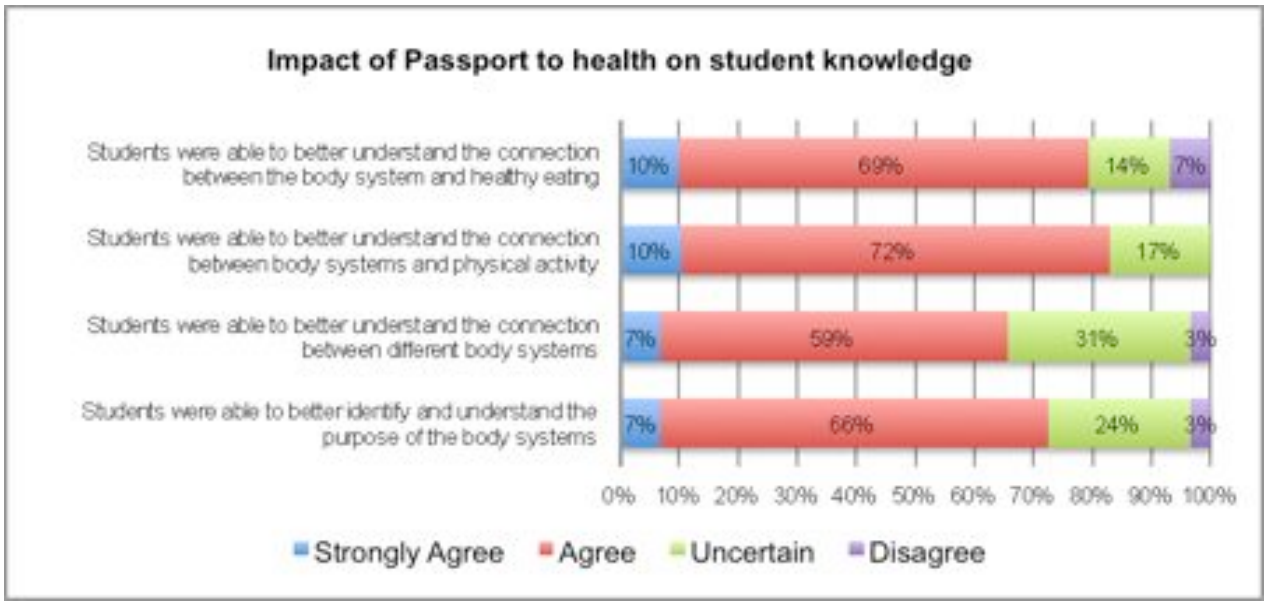
** Difference between means is statistically significant when using an alpha level of .05

It is interesting to note that while the percentage of students correctly responding to each question also improved in Year 1, *none* of the findings were statistically significant (in Year 1), which means all could have been due to chance.

Additionally, student focus group participants were asked what was the most interesting or important thing they learned in P2H. **Much like in Year 1, focus group participants in Year 2 said that learning about body systems, how they work and how they interact was the most interesting thing they learned. Others said learning about what choices constitute a healthy lifestyle, including healthy foods and engagement in physical activity were the most interesting and important things they learned.**

The data gathered from teachers help support the information from students. First, 75% of teacher interview respondents Agreed or Strongly Agreed that as a result of P2H, their students were better able to identify body systems. While this number is slightly lower than results from Year 1, it is still a considerable achievement. Second, as illustrated by Figure 2, a very high percentage of teachers Agreed or Strongly Agreed with each statement about the level of knowledge of students who participated in P2H this year compared with similar groups of students the teachers had taught this content to. For example, 82% of teachers Agreed or Strongly Agreed that students who participated in P2H were able to better understand the connection between body systems and physical activity than other groups of students their age.

Figure 2: Impact of Passport to Health on Student Knowledge



While these results are slightly lower than those reported in Year 1, it is possible that because this is the second year of programming, the baseline teachers use to gauge student learning may be set slightly higher, thus resulting in slightly lower levels of perceived student growth.

Teachers

To better determine whether or not teachers increased their health science content knowledge, and their health science instruction, the evaluation assessed the following indicators:

- *Teachers' attitudes toward teaching health science*
- *Teachers' ability to integrate health science concepts into their classroom*
- *Teachers' confidence in their ability to teach health science*

Teachers' attitudes toward teaching health science and their level of confidence

As illustrated by teacher surveys and interviews, P2H teachers were more comfortable teaching health science this year than in previous years, and P2H provided teachers with new, creative tools to help them reinforce their focus on health science.

As with the students, teacher surveys and interviews help determine whether or not teachers experienced an attitudinal shift regarding health science. As illustrated by Table 4, when asked on the post-survey to rate their level of agreement with a number of statements about teaching science on a scale of 1–5, where 1 = Strongly Disagree, and 5 = Strongly Agree, a high percentage of post-survey respondents Agreed or Strongly Agreed with the statements. For example, 92% of respondents Agreed or Strongly Agreed that they feel excited about teaching health science lessons as well as that they enjoy teaching health science content. Interestingly, percentages reported on the post-survey in Year 2 were much higher than those reported in Year 1, except when teachers responded to the statement: *Even when I am busy, I always try to make time to teach health science content*. In Year 1, 45% of post-survey respondents Agreed or Strongly Agreed with that statement, and in Year 2 that number decreased to 32%. Considering that time was one of the greatest barriers to implementation that was mentioned by

teachers, it's not surprising that Year 2 post-survey respondents reported low levels of agreement with this statement. Perhaps the Museum could consider seeking ways to ease integration for teachers.

Table 4: Teachers' Attitudes Toward Science

Statement	YEAR 1 % Agree or Strongly Agree	YEAR 2 % Agree or Strongly Agree
I feel excited about teaching health science lessons.	82%	92%
I enjoy teaching health science content.	82%	95%
I feel energized after teaching new health science content.	63%	75%
Even when I am busy, I always try to make time to teach health science content.	45%	32%

Using an adapted version of the SETAKIST survey,[7] JVA asked questions on the pre- and post-surveys about teachers' science-related teaching, knowledge and confidence. Both pre- and post-surveys had high numbers of respondents who Agreed or Strongly Agreed that they welcome questions from their students when teaching health science (100% of pre- and 98% of post-survey respondents) and that after they have taught a health science concept once, they feel confident teaching it again (93% and 100% pre- and post-survey respondents, respectively).

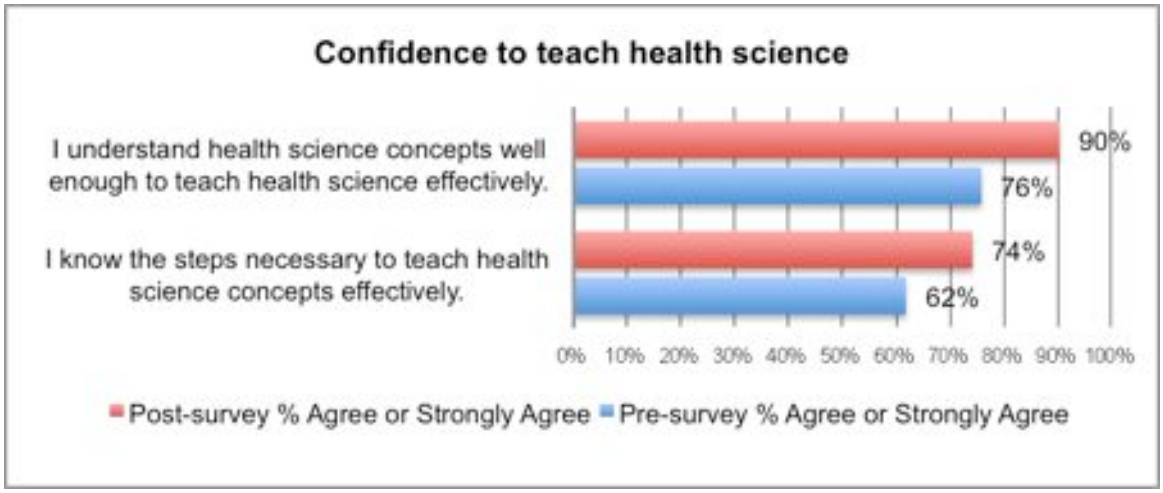
Additionally, according to post-survey respondents, 72% Agreed or Strongly Agreed that as a result of P2H they were more comfortable teaching health science content this year than in past years. Interview respondents also provided positive feedback about whether P2H gave them more confidence in their health science teaching abilities. Interview respondents said **P2H gave them a renewed interest in health science, gave them new, creative tools to implement health science curriculum, reinforced their focus on health science and gave them more confidence to teach the subject.** Further, while only 76% of respondents Agreed or Strongly Agreed that they had the skills necessary to teach health science before participating in P2H, on the post-survey, 94% said that they Agreed or Strongly Agreed with that statement.

As Figure 3 illustrates, P2H teachers reported higher levels of confidence in their abilities to teach health science. Interestingly, these numbers have shifted quite dramatically from Year 1. In Year 1, 44% of pre- and 69% of post-survey respondents Agreed or Strongly Agreed with this statement: *I know the steps necessary to teach health science concepts effectively.* In Year 2, 76% of pre- and 90% of post-survey respondents Agreed or Strongly Agreed with the same statement. Further, in Year 1, 54% of pre- and 78% of post-survey respondents Agreed or Strongly Agreed with this statement: *I understand health science concepts well enough to teach health science effectively.* In Year 2, those numbers were 62% of pre- and 74% of post-survey

[7] Questions taken from the SETAKIST survey published in: Roberts, Kyle and Henson, Robin K., "Self-Efficacy Teaching and Knowledge Instrument for Science Teachers (SETAKIST): A Proposal for New Efficacy Instrument." Presented at the Annual Meeting of the Mid-South Educational Research Association (28th, Bowling Green, KY, November 17-19, 2000).

respondents. Despite the fact that teachers in Year 2 reported higher levels of confidence on the pre-survey, they still demonstrated increases between the pre- and the post-surveys.

Figure 3: Teachers' Confidence in Teaching Health Science



Teachers' ability to integrate health science concepts into their classroom

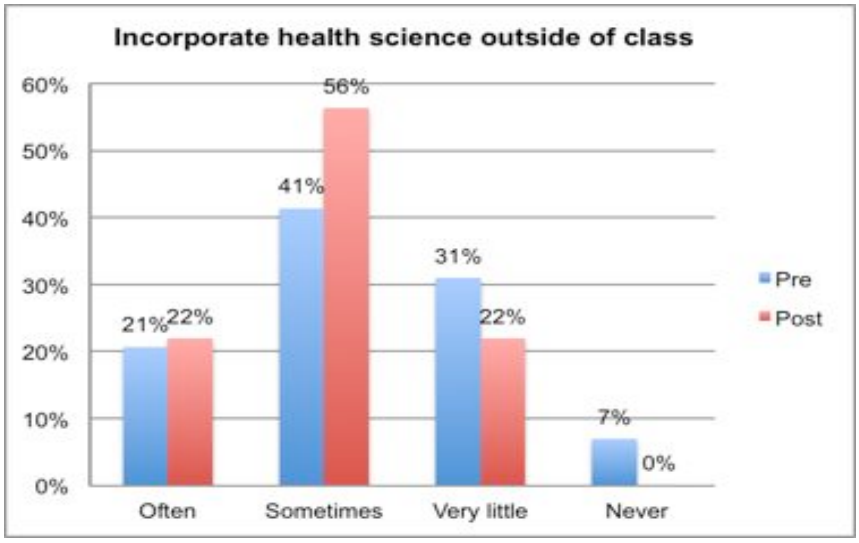
Teacher surveys, teacher interviews and the Journal user survey indicated that teachers had a challenging time integrating P2H materials into their classroom. Like in Year 1, teachers were more likely to integrate nutrition than physical fitness into science lessons, and were also more likely to utilize Journal pages that were directly related to P2H, rather than those that were math- or literacy-focused.

Integration of health science content was assessed in two ways: first, by exploring how often teachers integrated physical fitness and nutrition into science lessons, and second by exploring how often teachers integrated health science concepts into non-science lessons. With regards to integrating fitness and nutrition into science lessons, pre- and post-surveys revealed that much like Year 1 results, respondents were slightly more likely to incorporate *nutrition* than *physical fitness.* While 70% of pre-survey respondents Often or Sometimes incorporated nutrition into science lessons, 67% Often or Sometimes incorporated physical fitness. Similarly, 85% of post-survey respondents Often or Sometimes incorporated nutrition compared to 75% of post-survey respondents who Often or Sometimes incorporated physical fitness. It is important to note that while these increases did not demonstrate statistical significance, they are much higher than findings reported in Year 1, where only 68% of post-survey respondents Often or Sometimes incorporated nutrition, and only 56% Often or Sometimes incorporated physical fitness.

While integration of P2H concepts into science lessons was one program goal, P2H also hoped to encourage and support teachers in the integration of health science content into non-science lessons, especially math and literacy. The pre- and post-survey asked teachers how often they incorporated health science concepts into lessons outside of science. Interestingly, while 62% incorporated health science concepts Often or Sometimes as reported on pre-surveys, the number grew to 78% on the post-survey. Again, this increase did not demonstrate statistical significance, but it does demonstrate a dramatic increase in self-reported use of health science lessons and materials in non-health science classes. Finally, as Figure 4 illustrates, while 7% of teachers said, on the pre-survey, that they Never incorporated health science concepts into

lessons outside of science, that percentage decreased to 0% on the post-survey, indicating that by the end of the program year, teachers were incorporating health science into lessons outside of science Very Little, Sometimes or Often.

Figure 4: Percentage and Frequency of Respondents Who Incorporated Health Science Concepts Into Lessons Outside of Science



Despite the data above, according to teachers' reported use of specific Journal activities, teachers were far less likely to utilize Journal activities highlighting math or literacy than to use the activities directly related to P2H or other health science curriculum. In fact, only 10% of teachers used the *Goal Letter* activity, a literacy activity, compared with 73% who used the activity from the pedometer challenge called *How Many Steps?* Further, the Journal user data did not change significantly between Year 1 and Year 2, and in fact, 10% of users reported utilizing the *Goal Letter* activity in both years. Thus, while teachers may be finding ways to integrate health science into non-science lessons, they are not necessarily using P2H materials to do so.

Finally, it is interesting to note that among interviewees, the majority said they were able to integrate health science into non-science lessons, while only a few said they were not. Interview respondents specifically said that the flexibility of P2H curriculum, its alignment with district curriculum and the ability of teachers to connect P2H with other subjects made it easy to integrate.

Schools

In addition to increasing health science content knowledge of students and teachers, and increasing health science instruction among participating teachers, P2H hoped to increase the overall instruction of health science in participating schools. The evaluation used the following indicators to assess outcomes for schools:

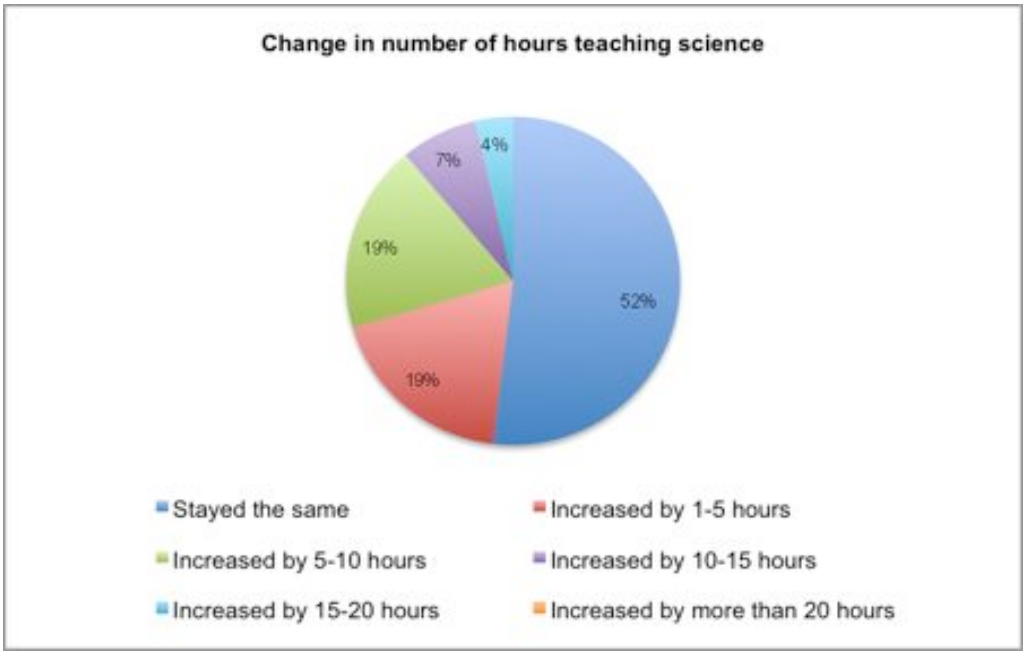
- *Health science resources available to students*
- *Time spent on health science instruction and integration of health sciences in math and literacy lessons*
- *Attitude toward teaching science*
- *Attitude toward P2H by school teachers, principal and personnel*

Through teacher surveys and interviews, the evaluation revealed that Year 2 P2H teachers were less likely to increase the number of hours they spent teaching science curriculum, and while schools were supportive of P2H programming, teachers reported that school leaders provided less direct and active support in Year 2.

Time spent on health science instruction

While teachers in Year 1 reported dramatic increases in the number of hours spent teaching health science, changes were less notable in Year 2. As Figure 5 illustrates, over half of responding teachers did not increase the number of hours spent teaching health science at all. In contrast, only 29% of teachers in Year 1 reported that the number of hours spent teaching health science content stayed the same. As is stated in Appendix II, it is possible that results have shifted in Year 2 because so many P2H teachers are participating for the second year, and as such, it is possible that they experienced dramatic increases in hours spent teaching health science in Year 1, making the baseline for Year 2 higher.

Figure 5: Change in Number of Hours Teaching Science



Attitude toward P2H by teachers, principal and school personnel

Teacher interviews demonstrated that while school leaders were supportive of the P2H program, they were less actively involved in Year 2 than in Year 1 programming.

Because P2H cannot be sustained through the support of the Museum alone, it is important to measure school-level commitment to the program. In teacher interviews at the end of the year, respondents were asked about the overall school opinion of P2H. **According to interview respondents, 75% said their principals and school leadership were supportive of P2H programming, although they may not have actively supported or participated in program components.** Unlike Year 1, when teachers said their principals demonstrated this support by helping to coordinate, plan or schedule events, none of the Year 2 teachers said their principals or school leaders were actively involved with scheduling, coordinating or planning P2H programming.

Did the program increase recognition of the value of physical activity, healthy foods and healthy lifestyles?

Students

To better understand if P2H increased students' recognition of the value of physical activity, healthy foods and healthy lifestyles, the evaluation assessed the following indicators:

- *Students' understanding of the connection between physical activity and their body's systems*
- *Students' value and interest in recreational and organized physical activity*
- *Students' attitude toward physical activities*

Understanding of the connection between physical activity and body systems

Like in Year 1, Year 2 teacher surveys revealed that students who participated in P2H were better able to identify the connections between body systems and physical activity than other students their age.

To determine if P2H affected the ability of students to draw connections between physical activity and body systems, teachers were asked to compare P2H students to similar groups of students who did not participate in P2H programming. Overall, **82% of teacher post-survey respondents Agreed or Strongly Agreed that compared with other groups of students their age, P2H participants were better able to understand the connection between body systems and *physical activity***. Additionally, 79% of teacher post-survey respondents Agreed or Strongly Agreed that P2H students were better able to understand the connection between body systems and *healthy eating.*

Students' attitude toward, and value and interest in recreational and organized physical activity

Again mirroring Year 1 findings, Year 2 student surveys, student focus groups, Family Health Day interviews and family surveys illustrated that students increased the amount of physical activity they engaged in and have a better understanding of the value of physical activity as a result of P2H.

The evaluation measured how often students were engaging in physical activity, and the value they placed on this activity. According to student pre- and post-survey data, there was a statistically significant increase in the number of times students engaged in something that made their heart beat faster and made them breathe hard in the last week. When analyzing only those pre- and post-surveys that can be matched for this question (n = 531), the mean for the pre-surveys was 5.59 times and the mean for the post-surveys was 5.79 times. While the difference between the two is small, and on both pre- and post-surveys students indicated they engaged in physical activity between five and six times, the analysis did indicate a statistically significant increase in activity. Further, when all post-surveys are included in the analysis (n = 784), more than 50% of respondents indicated that they were active seven or more times in the previous week. All of these numbers are higher than those reported by students in Year 1, when the mean number of times students indicated engaging in physical activity increased from 5.47 times per week on the pre- to 5.72 times a week on the post-survey.

To determine if the increase in physical activity was attributable to P2H, pre- and post-survey respondents were asked a series of questions to help clarify this. As Table 5 indicates, more than 80% of post-survey respondents indicated that as a result of P2H they Agree or Really Agree that they are doing more physical activity. Further, more than 60% Agree or Really Agree that they have joined a new sport or recreation team, club or class as a result of P2H. Supporting these findings, focus group participants were asked if they had changed how physically active they were since P2H started. Most students responded that they were doing more physical activity as a result of P2H, that they understand that physical activities can be fun, and that they know what will happen if you eat too much and why exercise is good for you.

While it is clear that students engaged in more physical activity, the evaluation also aimed to determine *why* this was the case. If P2H was responsible for encouraging increased levels of physical activity, what were students learning that was creating this change? Students were asked on the post-survey only to respond to a series of questions about the role of P2H in shaping their thoughts about physical activity. An increased understanding of the role of physical activity in being healthy, coupled with increased feelings of safety in their neighborhoods could be factors contributing to an increase in physical activity among students.

Table 5: Students' Thoughts About Physical Activity

Question or statement from pre- and post-survey	Pre-survey (*n* = 523-533)		Post-survey (*n* = 528-533)	
	Mean[8]	SD	Mean	SD
** *It is important to do physical activities.*	3.68	0.56	3.75	0.51
Doing physical activities helps keep me healthy.	3.73	0.55	3.73	0.48
I like doing physical activities.	3.62	0.57	3.63	0.60

**Difference between means is statistically significantly when using an alpha level of .05.

It is important to note here that while these reported means appear to be significantly higher than those reported in Year 1, the scale on the pre- and post-surveys shifted from a three-point scale in Year 1, to a four-point scale in Year 2, which could be the cause of significantly higher reported means in Year 2.

Interviews and surveys conducted with parents and families support the findings from the student surveys and focus groups. According to Family Health Day interview participants, 77% of respondents agreed that their child was more active as a result of P2H and 80% of parent post-survey respondents Agreed or Strongly Agreed that their family had increased the amount of physical activity they did because of P2H.

Finally, almost 90% of student post-survey respondents Agree or Strongly Agree with the statement: *Because of Passport to Health, I am living a healthier lifestyle.*

[8] It is important to note here that while these reported means appear to be significantly higher than those reported in Year 1, the scale on the pre- and post-surveys shifted from a three-point scale in Year 1, to a four-point scale in Year 2, which could be the cause of significantly higher reported means in Year 2.

Teachers

The Museum hoped that through participation in P2H, teachers would gain a better understanding of the implications of the benefits from student involvement in physical activity. To measure this, the evaluation assessed the following indicators:

- *Teachers' understanding of the connection between physical activity and body systems*
- *Teachers' awareness of physical activities students generally participate it*
- *Teachers' awareness of the physical activities available to students*
- *Teachers' encouragement of physical activities inside and outside the classroom*

Awareness of physical activities available to students that students generally participate in and encouragement of participation in physical activities

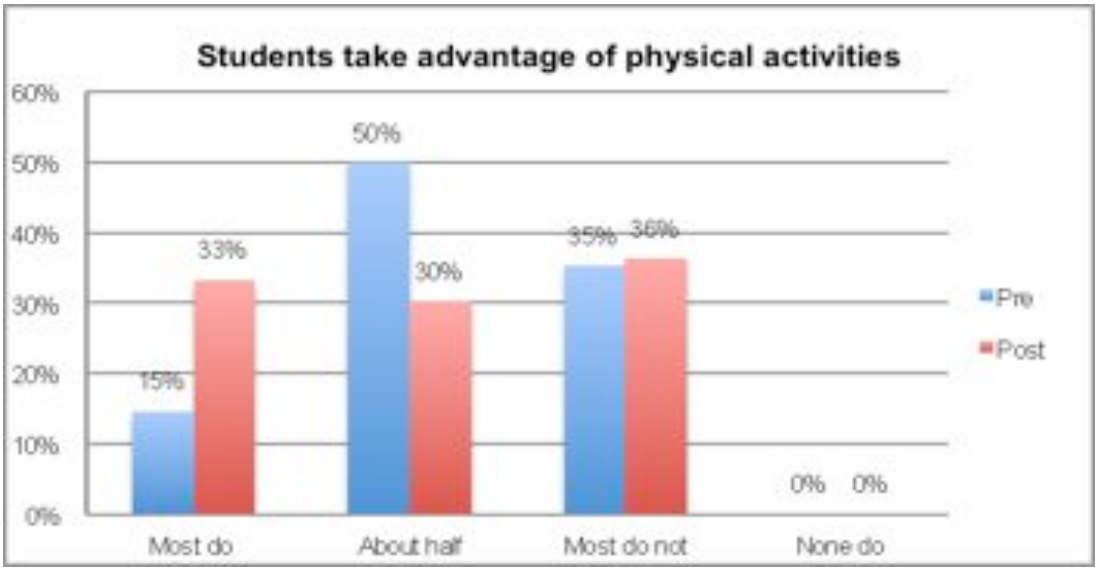
Teacher surveys demonstrated that as a result of P2H, teachers' knowledge of physical activities and resources available to students outside of school increased dramatically, and Year 2 teachers were more likely to encourage their students to participate in physical activity both in and outside of school.

By examining the pre- and post-surveys, a better understanding of teachers' awareness in regards to the physical activity levels of their students can be gained. For example, teachers were asked to rate their knowledge of the physical activities and resources available to students outside of school on a scale of 1 to 5, where 1 = Non-existent and 5 = Extensive. There was a significant increase in teachers' knowledge of resources when comparing pre and post-survey ratings (p = .03, $\eta 2$ = .02). Teachers' mean ratings of this item increased from 2.94 on the pre-survey to 3.24 on the post survey. Not only are these means significantly different, but they fall on opposite sides of the scale with average post-survey ratings falling toward the Extensive side of the scale (i.e., score above 3) and average pre-survey ratings falling toward the Non-existent side of the scale (i.e., scores below 3).

Further, according to teacher post-surveys, 41% of respondents Agreed or Strongly Agreed that as a result of P2H they learned more about the physical activities and recreational opportunities *available* to their students. Additionally, 55% of post-survey respondents Agreed or Strongly Agreed that as a result of P2H they learned more about the physical activities their students *participate* in. These numbers are slightly lower than those reported in Year 1, which could be due, again, to a higher baseline knowledge that teachers have acquired since starting P2H implementation in the 2009–2010 school year.

Finally, pre- and post-survey results provided information about whether or not teachers felt their students were taking full advantage of physical activities, parks and recreation centers available to them outside of school. Figure 6 illustrates that 50% of teachers participating in the pre-survey believed that about half of their students were taking full advantage of resources outside of school and only 15% thought that most students were. Illustrating an interesting shift from Year 1 data, in Year 2, 30% of teachers indicated on the post-survey that about half of their students took full advantage of resources outside of school, and 33% reported that most do. In Year 1, the changes between pre- and post-surveys were much smaller.

Figure 6: Percentage of Students Who Take Advantage of Physical Activities OUTSIDE of School



In addition to providing insight into the levels of awareness of teachers, the post-survey also asked teachers how likely they were to encourage participation in physical activity. This measure speaks to teachers' understanding of the importance of physical activity. The pre- and post-surveys asked teachers to indicate in the previous and current school years, respectively, how often they encouraged students to participate in *physical activity at school* and *outside of school.* Teachers could choose from: On a daily basis, On a weekly basis, On a monthly basis, A few times a semester, About once a semester and Never. In order to analyze this question, JVA assigned each response a numeric value, from 5 = On a daily basis, to 0 = Never. Analysis revealed a statistically significant difference between the pre- and post-surveys when teachers responded to encouraging students to participate in *physical activity at school.* The mean score increased from 4.03 in the pre-survey to 4.38 in the post. When viewed slightly differently, one can see that 39% of pre-survey respondents encourage physical activity at school on a daily basis, while 55% of post-survey respondents do.

Further, while there was not a statistically significant increase in teachers encouraging physical activity outside of school, it is interesting to note that 18% of pre-survey respondents encouraged it on a daily basis, compared with 24% of post-survey respondents.

Families

To begin to determine if families have shown better understanding of the importance of a healthy lifestyle for the whole family, the evaluation assessed the following indicators:

- *Families' attitudes toward nutrition and physical activity*
- *Parents' understanding of nutrition and physical activity and how they link to health*
- *Number of times parents engage in conversations with their children about healthy lifestyles*

Attitudes toward nutrition and physical activity

As illustrated by family surveys and Family Health Day interviews, families report making changes in the way their family approaches nutrition or physical fitness, and that P2H is increasing families' awareness around health and lifestyle choices.

P2H approached family involvement in two ways:

- Through direct participation in activities such as Family Fit Fest and Family Health Day
- Indirectly through conversations and interaction with their children

Overall, P2H families reported making significant lifestyle changes as a result of P2H. For example, 76% of family post-survey respondents Agreed or Strongly Agreed that they are paying more attention to nutrition labels as a result of P2H. Based on the changes being implemented in families, it seems likely that their attitudes toward nutrition and physical activity have changed over the course of participation in P2H programming. In fact, 70% of Family Health Day interview respondents said they are noticing changes in the way their child or family approaches nutrition or food, as a result of P2H.

"Instead of going for cookies, he reaches for Goldfish crackers more now. He has been drinking more milk and juice and less Dr. Pepper."

–Focus Families participant

Engaging in conversations with their children about healthy lifestyles

To a greater extent than in Year 1, Year 2 parent surveys and Family Health Day interviews demonstrated that families are likely to talk at home about health, nutrition and physical activity.

According to parent post-surveys, 83% of respondents Agreed or Strongly Agreed that because of P2H their family was talking more about healthy food and physical activity and how they relate to health. In addition, 92% of Family Health Day interviewees agreed that *because of P2H their child has talked about science, health and/or physical activity at home*. This demonstrates a significant increase from Year 1. Based on feedback from Family Health Day interview respondents, Table 6 illustrates the themes or topics most commonly discussed at home.

"Passport to Health has helped me as much as it's helped the kids!"

–Focus Families participant

Table 6: What P2H Topics Are Families Discussing?

	% of FHD interview respondents who agree
Exercise and its effect on body systems	27%
The Museum and other P2H components	23%
Food choices and nutrition	22%

Did the program encourage students to advocate for healthy changes at home and help families make those changes?

Students

Through participation in P2H, the Museum hoped to empower students to advocate for healthy options and behaviors within their family units. To measure this, the evaluation assessed the following indicators:

- *Students' ability to identify health food options*
- *Students' requests for new, healthy foods at home*
- *Students' encouragement and discussion of physical activity and healthy lifestyles at home*
- *Resources students bring to family*

Ability to identify healthy foods

According to findings from student surveys and student focus groups, students' ability to identify healthy foods increased significantly; students also continue to be able to ask and respond to critical thinking questions about food choices.

Student focus groups can help to make clear whether students were able to identify healthy foods. Just like in Year 1, when they were asked to list and discuss their ideas of "healthy foods," the majority of focus group participants listed fruits and vegetables. When they were asked, however, to list foods that were not fruits or vegetables, students provided examples such as: milk, meat, water, juice, rice and cheese. Again, much like in Year 1, students were able to respond to each other's questions about healthy versus unhealthy foods and the role that the preparation of food plays in how healthy or unhealthy something is. These types of student responses demonstrated that many P2H participants were able to think critically about healthy food choices.

The evaluation also helped clarify students' opinions of healthy food and helped to determine if they were advocating for changes at home. The student pre- and post-surveys asked a series of questions about healthy foods and healthy food choices. Respondents were asked to rate their level of agreement with three statements, on a scale where 1 = Really Disagree, 2 = Disagree, 3 = Agree and 4 = Really Agree. When pre- and post-surveys asked students whether they liked eating healthy foods, analysis revealed statistical significance, however, again it was not in the anticipated direction. While the mean response on pre-surveys was 3.38, the mean response on post-surveys was 3.30. Similarly, when students responded to the statement: *Healthy foods can taste good*, there was a statistically significant decrease in the mean from 3.35 on the pre- to 3.21 on the post-survey.

This is a fine example of unanticipated outcomes that can emerge from a program. These results could have emerged for any number of reasons, including that as a result of P2H, students have an increased understanding of what healthy foods are, and they were equipped with more information to decide whether they like to eat them. Or social pressure and norms for this age group could have encouraged students to answer incorrectly to avoid being viewed as "uncool."

Encouragement and discussion of physical activity and healthy lifestyles at home, ability to advocate for healthy foods, and resources students brought to families

Student focus groups, teacher interviews, parent surveys and Family Health Day interviews revealed somewhat conflicting information about whether or not students are advocating for healthier food choices at home. While focus group and interview respondents indicated that students are talking to their families more, post-survey results demonstrate different results. Further, teachers did not report noticeable changes in nutrition or physical fitness habits of their students.

There are numerous indicators that illustrate the fact that students are communicating P2H information to their families. For example, 92% of Family Health Day interviewees said their child had talked about P2H at home. Somewhat contrasting this finding, when asked if they were talking to their family about being healthy, on the four-point scale where 1 = Really Disagree and 4 = Really Agree, the pre-survey mean was 2.91, and the post-survey mean was 2.83. While this decrease was not found to be statistically significant, it is interesting to note the decrease. Interestingly, however, when focus group participants were asked if they were sharing information with their families, the majority of the students indicated they were. When asked what information they shared with their families, responses were somewhat different than what parent interview respondents reported talking about with their children (see Table 6). In order of frequency, students said they talked to their families about:

"We are noticing it more with our little girl. She has lots of questions and our son [the P2H participant] seems to be coaching his little sister about stuff he learned in the P2H program. Information from u (the parents) sees to hold less weight than information from her older brother."

–Passport to Health parent

- How to be healthy
- How the body works
- What foods they should be eating
- The importance of physical activity
- Why their parents and family members shouldn't smoke or do drugs
- The P2H activities and components

In addition, when students were asked, in focus groups, about food and nutrition changes they were witnessing at home, students mentioned their families were eating more fruits and vegetables and less junk food, and that they were eating healthier overall.

Despite the changes that students and families reported, 50% of teacher interview respondents said they did not notice a change in the foods their students were eating, nor in their level of nutrition. That said, some interview respondents mentioned that their students were eating more fruits and vegetables, but also that many schools were participating in external, district-level nutrition or healthy food initiatives, and that these initiatives, perhaps in partnership with P2H, may have impacted food choices.

Families

To support the Foundation's Healthy Living outcomes, P2H tried to encourage families to make changes that support the whole family eating better and moving more. To measure this, the evaluation assessed the following indicators:

- *Family members' participation in P2H activities*
- *Changes in the type of foods parents purchase and serve*
- *Changes in the type of recreation and organized activities parents encourage*
- *New physical activities tried/encouraged*
- *Health club and recreation center memberships/awareness*
- *Park visits/awareness*
- *Attitudes toward physical activity and nutrition*

Family participation in P2H activities

Based on the tracking of output data collected by the Museum, while family participation in P2H activities was still lower in Year 2 than the Museum hoped, teacher interviews revealed that participation was higher this year than in Year 1 and families seemed more engaged, overall.

While output data is more clearly defined and outlined in the Process Evaluation Report, this report also explores family engagement in P2H. According to teacher interviews in Year 1, only 15% of respondents said they found that P2H families participated in programming at higher levels than what can be traditionally expected for their students' families. In Year 2, however, 42% of interview respondents said family participation in P2H activities was good. Based on feedback gathered in Year 1, the Museum worked with schools to pair Family Fit Fest and other family-oriented activities with existing school events (i.e., science fair, math night, etc.), which seems to have resulted in increased participation and engagement at schools.

Further, while the Museum hoped to reach 2,500 participants through Family Health Day, output data measured a total of 1,233 non-school personnel participants. While this number is well below the programmatic goal, three schools did not participate in Family Health Day and this number represents an increase of 254 people from Year 1. As the Museum continues to focus on family engagement over the coming program year, it seems likely that participation will continue to increase.

The family membership component was also important for measuring family engagement. In total, 1,183[9] families redeemed memberships, 94% of whom were new members. Levels of participation at schools varied quite significantly, with one school redeeming only three family memberships and one school redeeming 155. Families from all 29 participating schools redeemed a membership. The membership component increased significantly from Year 1, when 708 memberships were redeemed.

Changes in the type of foods purchased and served, and the type of recreation that is encouraged

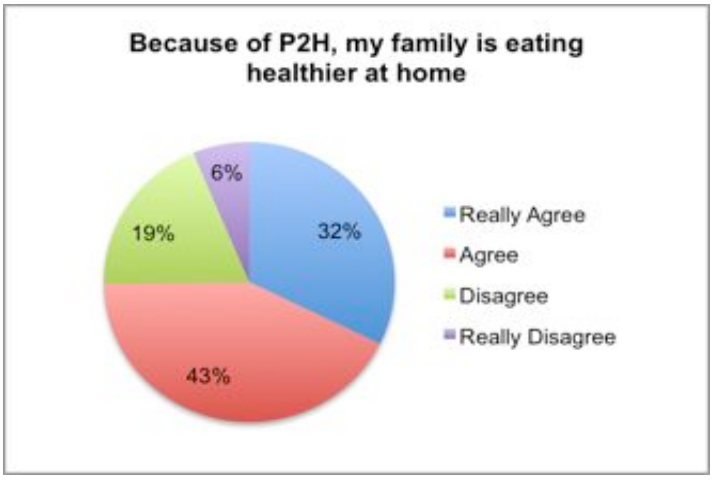
According to Family Health Day interviews, and family and student surveys, families are noticing positive changes as a result of P2H, are eating more vegetables and less sugar, are changing the foods they buy, and have increased the amount of physical activity they do.

[9] According to the *Passport to Health Membership Summary Report,* there were 1,186 memberships redeemed by P2H families. However, one membership was redeemed by a family at Stedman and another by a family at Wyatt-Edison, and while both schools were enrolled in and withdrew from P2H for the 2009–2010 school year, neither participated in the 2010–2011 program year. Further, one membership was redeemed by a family at an Unknown school. As such, these three memberships were removed from the final count.

According to Family Health Day interviews, 70% of respondents said that as a result of P2H, they were making changes at home to the way they approached nutrition or food. Of reported changes, the most common were: eating more fruits and vegetables, eating less sugar, and drinking less soda and more water. Interestingly, only 5% of interview respondents in Year 1 mentioned sugar when asked about changes they were making. It is likely that the introduction of Kaiser Permanente's *Think Your Drink* station is impacting families and their approach to sugary drinks.

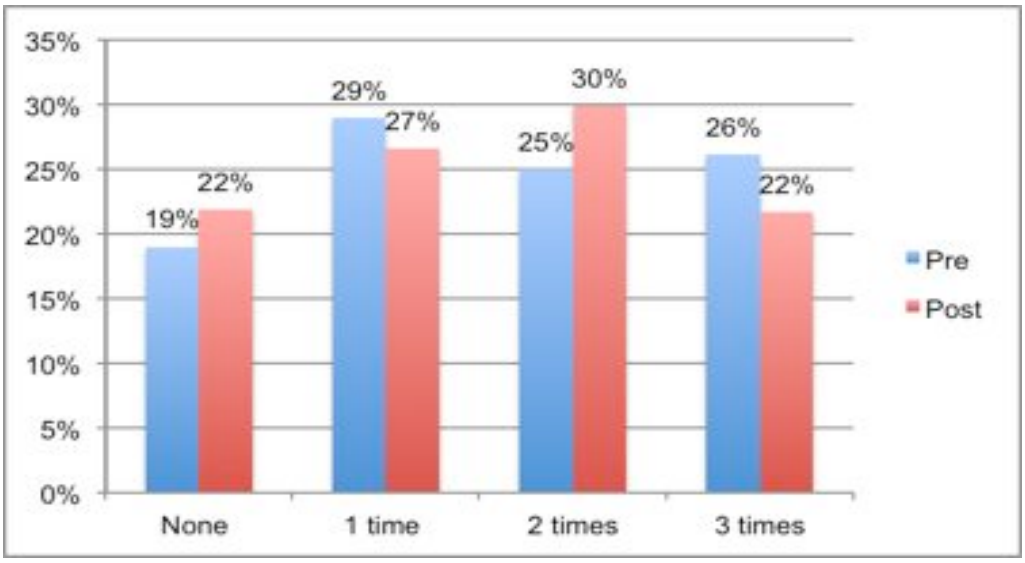
Interestingly, the findings from the family post-surveys are quite similar to those found in Year 1. According to post-survey results, 73% of respondents Agree or Strongly Agree with the statement *Our family has made changes in the foods we buy,* and 73% Agree or Strongly Agree with the statement: *Our family has made changes in the way we prepare food.* Finally, on the post-survey, students were asked for their level of agreement with the statement: *Because of Passport to Health, my family is eating healthier at home.* As Figure 7 reflects, 75% of respondents Agree or Really Agree with that statement, illustrating a dramatic increase from Year 1, when 43% of students indicated their families were eating healthier at home because of P2H. Despite the dramatic difference, it is important to note that the scale did change from a three-point scale in Year 1 to a four-point scale in Year 2.

Figure 7: Role of Passport to Health on Eating Healthy at Home



To provide a slightly more specific indicator, on the pre- and post-survey students were asked whether they had eaten vegetables the previous day and if so, how many. Analysis revealed a statistically significant increase in the amount of vegetables students ate the previous day. Interestingly, when only the matched pre- and post-surveys were analyzed, students demonstrated a statistically significant decrease in vegetable consumption, from a mean of 1.57 on the pre-survey, to a mean of 1.51 on the post-survey. When all student pre- and post-surveys are analyzed, regardless of matching, it appears as though differences between the two groups are minimal (see Figure 8 below). In fact, more post-survey students reported eating vegetables two times the previous day than on the pre-survey, but more post-survey respondents reported eating no vegetables the previous day than pre-survey respondents.

Figure 8: All Students' Consumption of Vegetables



In addition to monitoring changes in diet and food consumption, the evaluation hoped to measure changes in the type of recreation families are engaging in. Eighty percent of parent post-survey respondents Agreed or Strongly Agreed with the statement: *Because of Passport to Health, our family has increased the amount of physical activity we do.* Further, 79% of Family Health Day interviewees Agreed that their family was more active as a result of P2H, and many respondents said they were going to the park more.

Membership at, awareness of, and number of visits to parks and recreation centers

Based on family surveys and Family Health Day interviews, awareness of local parks and recreation centers increased slightly, however, much like in Year 1, the great majority of P2H families already knew of these places. Further, nearly all family post-survey respondents visited the Museum, parks and recreation centers the same amount this year as last year.

As a final family measure, the Museum hoped that participation in P2H would increase families' awareness of local parks and recreation centers and in doing so, would increase their use of these facilities. According to Family Health Day interviews, by the end of the program year, 94% of P2H families knew where the nearest park or recreation center was to their home. While 74% of these families knew where these places were before participation in P2H, 13% of respondents learned the locations of local parks and recreation centers as a result of their participation in P2H.

While participation in P2H did not dramatically change the percentage of families who were aware of local parks and recreation centers, the evaluation also measured whether or not families increased their use of these facilities. Table 7 demonstrates that while the majority of families visited the Museum, parks and recreation centers the same amount during the 2009–2010 school year as during the 2010–2011 school year, 27% of families visited the *Museum* more during the P2H implementation year, and 42% of families visited *parks* more. Interestingly, these numbers are quite similar to findings reported in Year 1.

Table 7: Self-Reported Use of the Museum and Local Parks and Recreation Centers

Compared to last school year my family has…	Less often	The same amount	More often
Visited the Denver Museum of Nature & Science	32%	42%	27%
Gone to a park	11%	48%	42%
Gone to and/or used resources at a recreation center	26%	45%	29%

In order to understand what held families back from utilizing these public resources, the family post-survey asked respondents to identify barriers to visiting parks and recreation centers. Overall, 27% of respondents agreed that their family did not have time, 25% said they were too expensive, 19% said the hours were too limited, 10% said they were too far and 3% said they were not safe. Not surprisingly, while the percentages varied slightly, this is the same order in which barriers were listed in the Year 1 report. Further, when asked about barriers preventing families from visiting the Museum, the number one barrier for the second year running was that *it is too expensive.* This continues to be an interesting and surprising finding considering the free Museum membership.

Did the program increase teachers' use of Museum resources?

Teachers

In addition to increasing teachers' health science content knowledge and instruction, the Museum hoped that participation in P2H would increase teachers' use of Museum resources. To measure this, the evaluation assessed teachers' overall knowledge of resources available through the Museum as well as teachers' uses of general Museum resources and those directly associated with P2H.

Knowledge of availability and use of Museum resources, both general and P2H

Based on teacher interviews and teacher surveys, while those teachers who did utilize Museum resources had positive feedback, strict district guidelines, limited time to prepare and integrate new materials, and a lack of exposure to materials prior to the start of programming made Museum resources somewhat challenging to access and utilize.

The Museum provides teachers with myriad resources, some of which relate directly to Museum programs, some of which are more general. While many of the available resources are meant for use in the classroom or on Museum fieldtrips, P2H partner teachers also gained access to two online resources: the *Expedition Health* Online Guide (designed for students in grades three to five and available to the public) and the Online Course. Like last year, teachers did not utilize P2H resources as extensively as the Museum had hoped. While most teachers reported utilizing the student Journal, many teachers' use of and access to resources was limited. While teachers had overwhelmingly positive feedback about the effectiveness and utility of P2H program materials, many mentioned that time and extensive district requirements make implementation challenging. When asked what the Museum could do to increase engagement with and use of Museum resources, the following ideas emerged: condense the Journal and tag non-health

science curricular pieces throughout the Journal; provide additional training (perhaps at the July Teacher Workshop) on Museum resources, not only those associated with P2H; provide more lesson plans and activity ideas in the e-newsletter; and ensure even closer alignment with curricular requirements.

In order to gain a more specific understanding of the use of Museum resources, teachers were asked on the post-survey to indicate which of the P2H resources they had used. Like in Year 1, the most commonly used resource was the student Journal, which was used by 97% of teachers. While this is an impressive statistic, it is important to remember that Museum educators used several Journal activities during classroom or Museum visits, and the teacher post-survey was not designed to clarify whether the teacher used the Journal independently of Museum visits, or only in conjunction with educators. With the exception of the Journal, other resources were used less frequently. The most underutilized resource was the online guides, with 38% of respondents indicating they never accessed this particular resource.

While the Museum had an Online Community page for P2H teachers in Year 1, that platform was changed in Year 2 and the Online Community page ceased to exist. Instead, the Museum supported an online course for teachers who wished to receive continuing education credits. While 18 teachers originally signed-up for the class, only 10 participated all year and graduated at the conclusion of the program. Feedback from those who did participate was quite positive and it seems as though the use of this new platform and system was an effective and efficient shift.

In addition to asking specifically about use of P2H resources, the pre- and post-surveys asked teachers what Museum resources they had used in the past, while the post-survey asked what Museum resources teachers had used over the year of implementation. As Figure 9 illustrates, findings from the pre- and post-survey are quite similar, with pre-survey respondents reporting the highest use of Museum visits with their class, pre-visit activities and visiting the Museum on their own time; and post-survey respondents reporting highest use of the same resources. Teachers were more likely to report use of exhibit activity guides and online guides on the post-survey.

Figure 9: Respondents Reported Use of Museum Resources

Museum Resource	% of pre-survey respondents who used it (*n = 34*)	% of post-survey respondents who used it (*n* = 34)
Online guides	29%	41%
Museum visits w/ class	74%	100%
Pre-visit activities	62%	79%
Professional development	41%	29%
Exhibit activity guides	35%	50%
Free previews	32%	24%
Post-visit activities	32%	38%
Museum visit on own time	53%	70%

While in Year 1 teachers said one of the greatest barriers to full implementation of P2H was a lack of familiarity with the program, this sentiment shifted for the majority of teachers for whom this was their second year of implementation. Instead, when asked about barriers to utilizing Museum and P2H resources, Year 2 teachers mentioned strict district guidelines, limited curricular freedom and an overall lack of time to implement new lessons.

Conclusions and Recommendations

Overall, and as is reflected in the body of this report, this evaluation has again returned positive results regarding the outcomes of P2H. As the Process Evaluation illustrates, the program was well planned and program leadership was receptive to mid-course changes that were suggested to improve programming. Additionally, this outcomes report has further illustrated that the program team is committed to program improvements and to the completion of a thorough evaluation. In order to continue to achieve the outcomes established for the program, the Museum might consider implementing a few changes or re-emphasizing certain program components. While very specific recommendations based on the findings from each data collection method can be found in each of the subsequent appendices, the following represent overall recommendations identified over the course of the evaluation:

- For the second year, the **Focus Families component** was the least successful evaluation component. With the support of the internal Museum researcher who will be exploring and further evaluating family engagement in P2H, *the Focus Families component could be eliminated and replaced by a more effective and efficient evaluative tool.*

- Based on feedback from teachers, there is a desire to make the **July Teacher Workshop** more of a hands-on exploration of the Journal and other activities teachers can implement in their classroom. *For the July Teacher Workshop, the Museum could consider spending less time on logistics and Expedition Health, and more time demonstrating the Journal and specific activities that are not facilitated by Museum educators.*

- Although teachers recognized the value of the **student Journal**, and that it contained math and literacy activities, many said they didn't have time to learn the activities and integrate them effectively into non-health science lessons. *The Museum could consider dividing the Journal more deliberately into activities tied directly to P2H components, those to use for math or literacy, and others.*

- Based on feedback from multiple sources, **coupling P2H events** with other scheduled school events proved to be an effective way to increase family engagement and participation. Considering this, *the Museum should continue to schedule P2H events in partnership with other school events, in an effort to continue to increase engagement and participation, and to further involve the school community in P2H programming.*

- According to teachers and Museum program staff, when **teachers are actively engaged** in programming, it runs more smoothly on the ground. Additionally, in their words of wisdom to new P2H teachers, returning teachers said that it's important to show your students that you are excited about and engaged with the program. *The Museum should continue to find ways to actively engage teachers in all aspects of programming—from providing free memberships, to scheduling and completion of components.*

DENVER MUSEUM OF NATURE & SCIENCE

Appendix I: Passport to Health Year 3 Student Report

Summary of Surveys and Focus Groups

Submitted July 22, 2011 By:

JVA CONSULTING, LLC
partners in community and social change

Introduction

In spring 2009, the Denver Museum of Nature & Science (the Museum) opened a new health science exhibit, *Expedition Health*, which stems from the Museum's new Health Science Initiative and replaces the *Hall of Life* exhibit that was an integral part of the Museum for many years. To add a key education component to complement this exhibit, the Colorado Health Foundation (the Foundation) provided a generous grant to fund the development and implementation of the Passport to Health program (P2H). P2H was originally a three-year program with one year for design and two years for implementation. However, a no-cost extension is allowing for three years of implementation. The Museum designed the program to help improve health outcomes for fifth-grade students as well as their families and teachers at 30 low-income schools in the Denver metro area. The Museum contracted with JVA Consulting, LLC (JVA) to conduct a comprehensive evaluation of P2H, including two key components: a process evaluation to examine the program design and implementation, and an outcomes evaluation to measure the program's abilities to meet its overall objectives. JVA is utilizing multiple methods to collect both quantitative and qualitative data that will provide the Museum, the Foundation and other stakeholders with important insight into the progress of the program and its outcomes. The evaluation and its ongoing findings will enable the Museum to make informed decisions in program refinement and track ongoing program accomplishments. This report helps inform the outcomes evaluation by providing insight into the effects of the program on students.

Through P2H, students, their teachers and families are engaged in activities, classroom instruction and field trips aimed at increasing students' awareness of physical activity, nutrition and how the two relate to healthy lifestyles. By implementing the program components and achieving the desired outputs, the Museum hopes that students will achieve the following outcomes:

1. Increase their health science content knowledge
2. Recognize the value of physical activity and its contributions to a healthy lifestyle
3. Advocate for healthy options and behaviors within their family

This report aims to answer the following three questions, which relate to students:

- *Did the program increase health science content knowledge?*
- *Did the program increase recognition of the value of physical activity, healthy foods and healthy lifestyles?*
- *Did the program encourage students to advocate for healthy changes at home and help families make those changes?*

Methodology

JVA, in coordination with the Museum, utilized a mixed-methods approach to collect quantitative and qualitative data from students to inform the evaluation. The following methods were used in the student evaluation:

Pre- and post-surveys

During the 2010–2011 school year, JVA conducted pre- and post-surveys with P2H students. JVA collected 999[10] pre-surveys from students in 23 participating schools. The student survey was developed by conducting a thorough review of more than a dozen existing instruments that measure health science knowledge and behaviors and adapting specific questions to measure the outcomes associated with this evaluation.

JVA collected post-surveys from 851 students in 22 schools participating in the P2H program. Post-surveys were administered in spring 2011 once schools had completed all program components including Family Fit Fest and Family Health Day.

Pre- and post-surveys were matched by student in order to analyze their responses before and after the P2H intervention. Both pre- and post-surveys were assigned a unique identifier for each student consisting of the student's self-identified date of birth, the JVA-assigned school code and the JVA-assigned teacher code. Based on this identification system, there were only four pairs of students who shared the same identification code. As a secondary measure, each student's gender was added to the identification. After matching pre- and post-surveys using the student identification system, there were 604 matched pre- and post-surveys. This was a notable increase over the 457 matched tests during the 2009–2010 school year (as reported in the Year 2 Student Report). Upon running comparison data, where participants with missing data are not included in the analysis, the size of comparison groups remained strong (ranging from 470 to 540 pre-post pairings, with majority of the comparisons in this report having a sample size of around 530). The size of these groups is well over the amount needed to detect significant differences in the data. Therefore, Museum staff should be very confident that the data reported herein accurately reflects what is occurring across most students in the P2H program.

Pre- and post-surveys were analyzed using descriptive statistics, such as frequency, mean and standard deviation. Where there were matched pre- and post-surveys, paired-samples t-tests were conducted, which are used to compare the mean scores of the same groups of people at two points in time. These tests are used to determine if the differences between the pre- and post-survey are statistically significant, and that with an alpha of .05, you can be 95% confident that the difference is not due to chance. Finally, with these tests, a p-value shows whether there is a statistically significant difference and the effect size suggests how meaningful that difference is.

A quick note on significance testing. Although mean differences are reported herein to help inform P2H programmers, changes that are non-significant should be interpreted with *extreme* caution. When a change in scores is non-significant, it indicates that the shift reported is more likely due to chance (or other non-measured factors), and not necessarily attributable to programming.

Focus groups

Five focus groups were conducted in the spring of 2011 with students who had participated in the P2H program. The five schools were: Eiber (Jeffco), Federal Heights (Adams 12), KIPP Sunshine Peak Academy (DPS), Montview (APS) and Parklane (APS). Schools were chosen at random, and JVA used two schools from DPS and APS because these districts had higher

[10] This number includes 81 fourth-graders from Federal Heights Elementary School. After discussions with Museum staff, JVA decided not to include the students in the following analysis to remain consistent with the fifth-grade approach.

levels of participation in P2H than the other districts.[11] Student participants were also chosen at random. All of the students for whom JVA received parental informed consent were put into an envelope, and names were chosen from each participating classroom, for a total of six to nine participants.

A moderator's guide was created, which included questions covering topics such as students' perceptions of science before and after participation in P2H, their perceptions of what it means to be healthy, P2H components they shared with their families, ways they could be healthier and how they could help their families live healthier lives. In addition to the moderator, a note taker was present taking detailed notes during the discussion. Each focus group also had a staff member from the participating school present.

Study limitations

These methods were selected to obtain information about the implementation and effects of P2H on students. However, it is important to note the limitations to each method and the impact on analysis. The survey was designed to gather pre- and post-data from the same individuals with the intent of conducting statistical analysis to determine the extent and significance of change in behavior and knowledge. While there were sufficient number of matched pre- and post-surveys to conduct analysis, there were many students who lacked a match due to limitations in data collection. For example, different youth received different levels of treatment due to being absent or enrolling in the school later in the year, which can impact results. In addition, survey items such as date-of-birth are essential to creating the unique identifier for students. If students provided the wrong date of birth or recorded the wrong year of birth, confidently pairing the student became much more difficult. Finally, there are other issues that can impact the data in these types of test. Factors such as student maturation, social norms, and possibly test/re-test bias, can impact the data in these types of investigations.

Focus groups are a specialized method to gather in-depth information from a small number of people and to provide a setting to clarify responses, probe for additional information and use group dynamics to further discussion. However, the information expressed in focus groups is derived from a small number of people who are not representative of the complete population, and results are not reflective of an entire population or community.

Finally, it is important to note that not everything is attributable to P2H, but rather could be a result of natural learning. However, by triangulating the analysis and controlling for variables through analysis, the role P2H had in achieving students' outcomes becomes clearer.

Analysis

Did the program increase health science content knowledge?

According to P2H program materials, the Museum's definition of health science is as follows: *the study and gaining of new knowledge of human biology, disease and wellness, and the application of these discoveries to your life*. To determine if P2H increased students' health science content knowledge, students were asked questions about their knowledge of nutrition and body systems as well as if P2H affected the way they thought about science.

[11] There was a sixth focus group scheduled in a DPS school, unfortunately the teacher did not collect parent consent forms and as a result, it was cancelled. As it was very near the end of the school year, it was not possible to reschedule.

Knowledge of nutrition and body systems

Students were asked four multiple-choice questions to gauge their knowledge of nutrition and body systems on the pre- and post-surveys. Table 1 details the percentage of matched pre- and post-survey respondents who answered each question correctly. For all questions, there was a higher percentage of students who answered the questions correctly on the post-survey. The question with the biggest increase in correct responses dealt with the impact of physical activity on body systems, with more than 55% of students correctly identifying the body systems on the post-survey compared with 47% on the pre-survey.

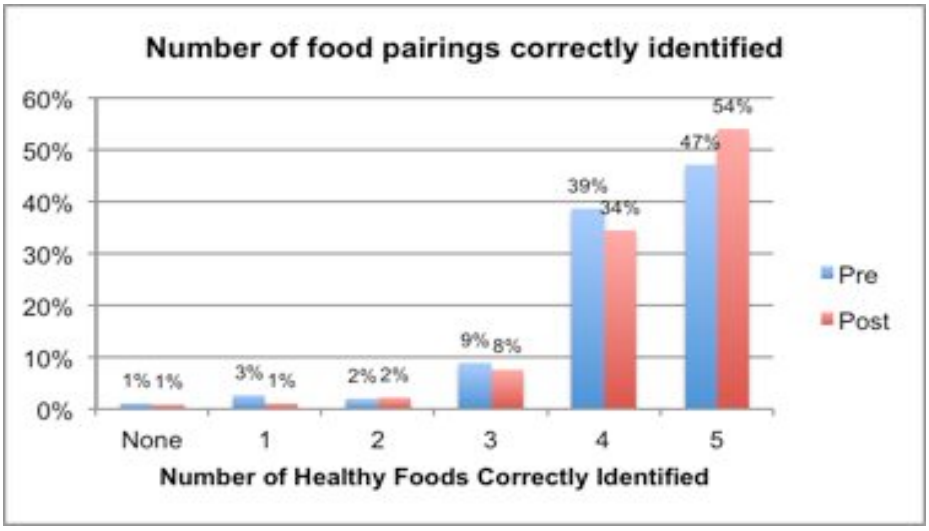
Table 1: Students' Knowledge of Nutrition and Body Systems

Question	Pre-survey % correct	Post-survey % correct
How much food does your body need?	20.3%	22.4%
Look at this picture, which shows some of the organs that can be found inside the human body. What is the main job of the organ with the arrow pointing to it?	69.1%	71.4%
In your body, what two organs work together to make sure that oxygen gets to all the other organs of your body?	69.8%	70.9%
Physical activity has an impact on which of the following body systems?	47.2%	55.7%

In addition to these questions, a new item was designed to assess the degree to which students could correctly identify healthy food. For this new item, five healthy-unhealthy food pairings were listed and students were asked to pick the healthier food from each pair. This item was given on both the pre- and post-survey. Results suggest that students significantly improved in their ability to identify healthy food options (p = .007, η^2 = .02)[12]. On the pretest survey, students average score (with a score of 5 indicating 100% correct) was 4.23 (SD = 1.07). This significantly increased to 4.37 (SD = 1.05) on the post-survey. Figure 1 outlines the pre-post changes in number of correct pairings.

[12] η^2 or eta-squared, is a measure of "effect size" or degree of difference in data that is attributable to your experimental delivery. Simply put, it is an approximation of the unique impact your program had on the data. Eta-squared can indicate a small effect (.01), medium effect (.06), or large effect (.14). Smaller effect sizes indicate that are a number of other factors impacting your data, and therefore, data should be interpreted with caution.

Figure 1: Number of Food Pairings Correctly Identified



Attitudes toward science

Students were also asked on the pre- and post-surveys to indicate their level of agreement with statements about science on a 4-point Likert-type scale, where 1 = Really Disagree, 2 = Disagree, 3 = Agree and 4 = Really Agree.[13] Table 2 below reflects the mean score and standard deviation of the matched pre- and post-survey respondents to each statement. A paired-samples t-test was conducted for each statement to evaluate the impact of P2H on students' thoughts about science. Two statements resulted in statistical significance. There was a statistically significant decrease in students' perceptions of the statements: *I am interested in learning about science*, (p = .000, and η^2 = .03), and *I have fun learning science topics*, (p = .000, and η^2 = .05). This is the second year that interest in learning science significantly decreased from pre- to posttest. Having fun learning science decreased in Year 1, as well, however, it was not a significant decrease as was seen this year. This is not the direction in which JVA would hope to see changes as a result of the program. This result may be related to the timing of the survey, as the pre-survey was taken at the beginning of the year when students are excited to learn and the post-survey was taken at the end of the year when students may be tired of learning. However, while the results of the survey indicate a decrease in students' interest in learning science, other data collection results (e.g., focus group comments) reveal that P2H helped make science more interesting.

Table 2: Students' Thoughts About Science

Question or statement from student pre- and post-survey	Pre-survey (n = 524-538)		Post-survey (n = 524-538)	
	Mean***	SD*	Mean	SD
***I am interested in learning about science.*	3.51	0.61	3.39	0.66
Science helps me understand more about me.	3.35	0.61	3.39	0.70

[13] Numbers where not included on the student survey, but were added here to clarify how scores where calculated. Higher score indicate more student agreement with a particular statement.

Question or statement from student pre- and post-survey	Pre-survey (*n* = 524-538)		Post-survey (*n* = 524-*538*)	
	Mean***	SD*	Mean	SD
When I am not at school, I still can use science.	3.15	0.81	3.15	0.83
***I have fun learning science topics.*	3.48	0.65	3.29	0.76

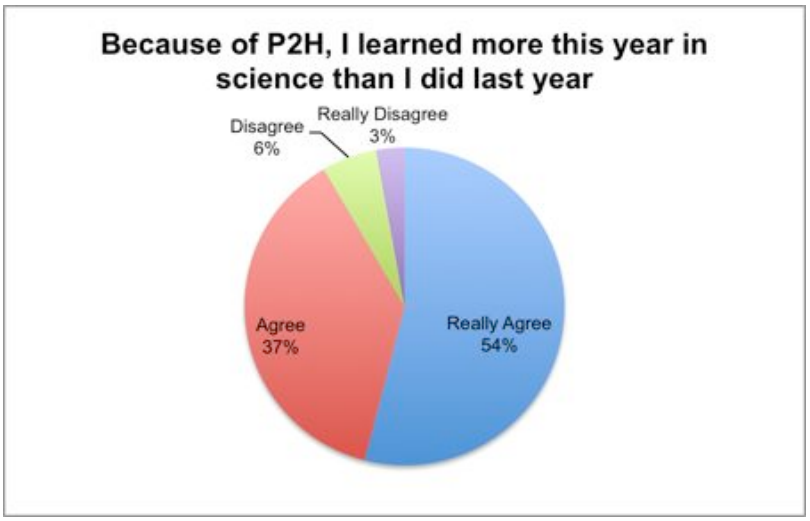
*Standard Deviation (SD) is a measure of variation of responses around the mean. The higher the standard deviation, the more variance there is in the responses.

**Difference between means is statistically significantly when using an alpha level of .05.

***Means are noticeably higher than those in 2010 due to a change in the scale used. A 3-point Likert-type scale was used last year, whereas a 4-point Likert-type scale was used in 2011.

To help understand whether the program increased students' knowledge of health science, students on the post-survey only (*n* = 772) were asked whether they learned more this year in science than they did last year because of Passport to Health, using the same rating as above. As illustrated by Figure 2, 91.5% of students indicated that they Really Agreed or Agreed with the statement: *Because of P2H, I learned more this year in science than I did last year.*

Figure 2: Role of Passport to Health on Learning Science



Finally, the student focus groups provided qualitative information to help determine if P2H increased students' health science content knowledge. To address this question, students were first asked if P2H affected the way they thought about science. As in Year 1, almost all focus groups participants responded that P2H had a positive effect on the way they thought about science. This is somewhat surprising considering the less than favorable survey results presented in Table 2 (above). Although interest in learning science and students' feelings that learning science can be fun decreased from pre- to post-survey, the following themes occurred often in student focus groups and contradict results emerging in the pre- and post-surveys:

- **Hands-on.** P2H was more hands-on than students' previous science courses. Students indicated that all of the activities and experiments, and the opportunity to learn at the Museum made fifth-grade science classes more interesting and engaging.

- **Interesting content.** P2H introduced students to new science content. Students expressed that they found the new information interesting and enjoyed leaning things such as how their bodies work.

Next, students were asked what was the most interesting/important thing they learned in P2H. For the most part, responses focused on the human body and how to stay healthy:

- **Body/body systems.** Students learned more about how the body works, how body systems interact, and how muscles and bones work.
- **Staying healthy.** Participants learned why it is important to stay healthy and what choices constitute a healthy lifestyle including healthy foods and engagement in physical activity.

Overall, while pre- and post-surveys illustrated different results, focus group data indicate that students participating in P2H found science to be more interesting and engaging this year, learned more about body systems and how the body works, and better understood how science affects them in real life. When students were asked what their favorite part of P2H was, common answers emphasized experiential components such as the laboratory in Expedition Health, and numerous activities including, heart rate and stethoscope activities, the bike activity, the activity where they could move things with their mind, and the music and "move your feet" station at the Museum. These findings reinforce Year 1 data, and indicate that consistently, students enjoy experiential components of P2H.

Did the program increase recognition of the value of physical activity, healthy foods and healthy lifestyles?

Level of activity

To help understand students' activity level, both the pre- and post-surveys asked students to circle how many times in the last week they did something that made their heart beat faster and made them breathe hard (with example statement and images included). As illustrated in Table 3 below, the mean for the matched pre- and post-survey respondents was between five and six times in the last week for each group. A paired-samples t-test was conducted to evaluate the impact of P2H on students' activity, which indicated a statistically significant increase in activity level from the pre-survey to the post- survey (p = .016, and η^2 = .01). A similar change was recorded in the Year 2 Student Report. While the change is significant, it is important to note the effect size is small (.01), which suggests that although there is a difference between the two groups, the amount of change that can be attributed to P2H is small.

Table 3: Students' Level of Activity

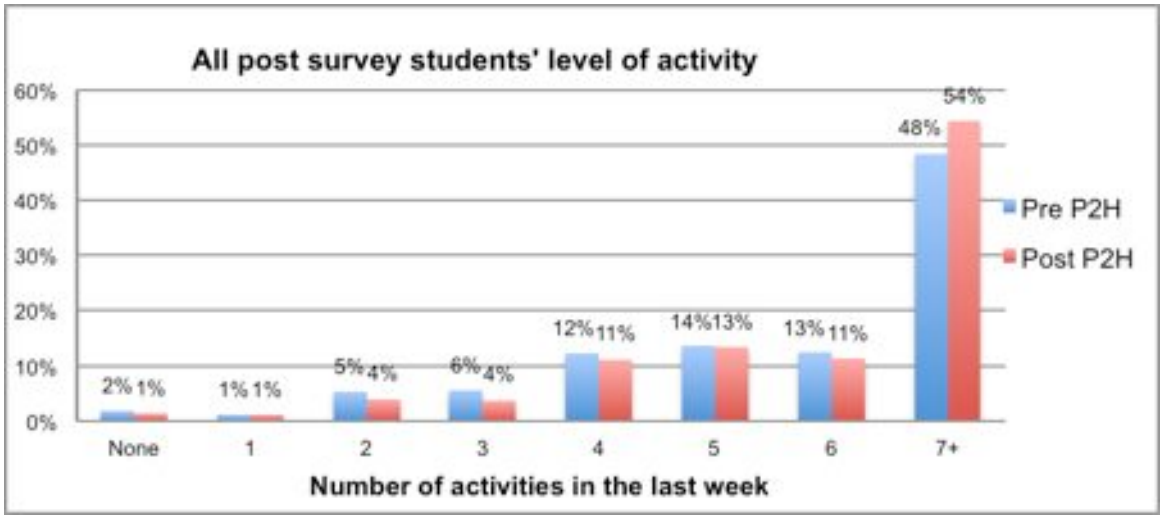
Question	Pre-survey (n = 531)		Post-survey (n = 531)	
	Mean	SD	Mean	SD
***How many times in the last week did you do something that made your heart beat faster and made you breathe hard (like swimming laps, running, playing soccer, playing tag, dancing, skating or anything else)?*	5.59	1.74	5.79	1.67

**Difference between means is statistically significantly when using an alpha level of .05.

Not all of the post-survey respondents were reflected in Table 3 above, because only those who had a matching pre-survey were included. Figure 3, below, captures the activity level of all (i.e.,

who completed this question) post-survey respondents (*n = 784*). As illustrated by the figure, more than half of the post-survey respondents participated seven or more times in some type of physical activity in the previous week.

Figure 3: All Post-Survey Students' Level of Activity



Attitudes about physical activity

Respondents were asked to indicate their level of agreement with three statements about physical activity on the same 4-point Likert scale discussed previously, where 1 = Really Disagree, 2 = Disagree, 3 = Agree and 4 = Really Agree. Table 4 presents the mean and standard deviation for both groups of matched students. Once again, a paired-samples t-test was conducted to evaluate the change in students' perceptions of physical activity between the pre- and post-surveys. Ratings of the statement: *It is important to do physical activities,* significantly increased from pre- to post-survey measurement (p = .019, and η^2 = .01). In Year 1, ratings of two statements had statistical significance, with *Doing physical activities helps keep me healthy*, and *I feel safe playing outdoors in my neighborhood,* both significantly increasing.

Table 4: Students' Thoughts About Physical Activity

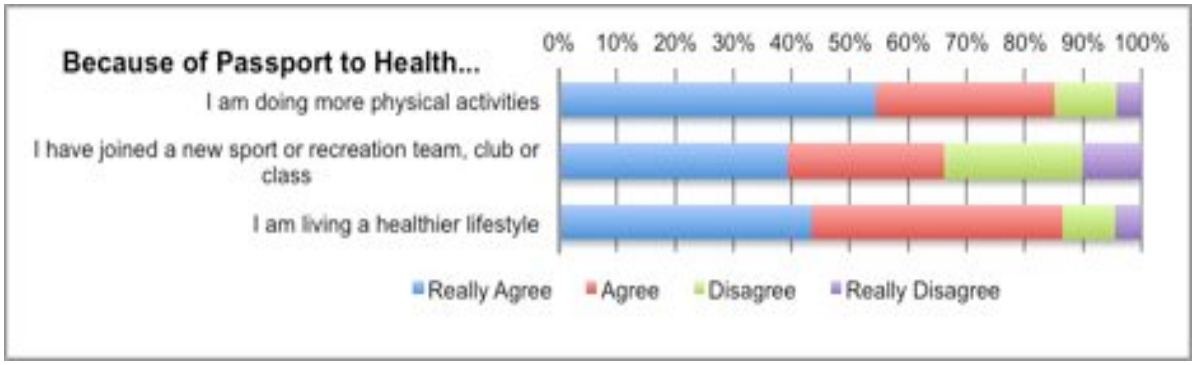
Question or statement from pre- and post-survey	Pre-survey (*n* = 528-533)		Post-survey (*n* = 528-533)	
	Mean	SD	Mean	SD
***It is important to do physical activities.*	3.68	0.56	3.75	0.51
Doing physical activities helps keep me healthy.	3.73	0.55	3.73	0.48
I like doing physical activities.	3.62	0.57	3.63	0.60

**Difference between means is statistically significantly when using an alpha level of .05.

Finally, all students who participated in the post-survey were asked to respond to a series of statements about the role of P2H on their activity level and lifestyle using the same rating scale as above. Figure 4 illustrates the percentage of all post-survey students (*n* = 784) who responded to each statement and their ranking. Students had high perceptions of the P2H program based on their responses. Over 80% of post-survey respondents either Agreed or

Really Agreed that they are doing more physical activities and living a healthier lifestyle because of P2H.

Figure 4: Role of Passport to Health on Physical Activity



The student focus groups also provide insight into whether students understand what it means to be healthy and whether they are engaging in more physical activity since participating in P2H. When focus group participants were asked what it means to be healthy, an overwhelming majority of participants said that being active or exercising, and eating healthy made you healthy. Other common responses included: getting enough sleep and drinking enough water.

Additionally, just as in Year 1 of the program, when participants were asked if they had changed how physically active they were since P2H started, most students said they were doing more physical activity. This is supported by the survey data. This can be due to random sampling, the group dynamics of focus groups, or the personal interaction in focus groups. Of those who said they were more physically active, most indicated this was a direct result of P2H. For example, some said P2H showed that physical activities were fun, what will happen if you eat too much, and why exercise is good for your body.

Attitudes about eating healthy

The pre- and post-survey respondents were asked to rate their level of agreement with three statements about eating healthy, on the same 4-point Likert scale (where 1 = Really Disagree, 2 = Disagree, 3 = Agree and 4 = Really Agree). Table 5 details the means and standard deviations for each statement. Paired-sample t-tests indicate that two statements were statistically different when comparing pre- to posttest. The statements: *I like eating healthy,* (p = .03, and η^2 = .01), and *Healthy foods can taste good* (p = .00, and η^2 = .02), showed significant decreases on the post-survey. These decreases represent a similar trend to Year 1 data where the statement: *I like eating healthy,* decreased, as well. There are unanticipated outcomes that can result from the program. For instance, as a result of P2H, students have a better understanding of what healthy foods are, which gives them more information to decide whether they like to eat them. Additionally, the age range surveyed herein represents a time where youth begin to conform to social norms. The decreases may be due to norms that eating healthy tastes bad or is not “cool.” It may also be a comparison that youth make against unhealthy foods. For example, it may not be that healthy food tastes bad, but that unhealthy food tastes much better in comparison.

Table 5: Students' Attitudes Toward Healthy Foods

Question	Pre-survey (*n* = 525-531)		Post-survey (*n* = 525-531)	
	Mean	SD	Mean	SD
Eating healthy foods is important for my body.	3.82	0.48	3.79	0.48
***I like eating healthy foods.*	3.38	0.73	3.30	0.72
***Healthy foods can taste good.*	3.35	0.77	3.21	0.82

**Difference between means is statistically significantly when using an alpha level of .05.

Additionally, focus group participants were asked to reflect on examples of healthy food. Overall, students were more likely to name fruits and vegetables than anything else, but other common responses included dairy products and grains. This represents a greater variety of foods than were named by Year 1 focus group participants. When asked specifically for healthy foods that were not fruits or vegetables, students provided examples such as: milk, meat, water, juice, rice and cheese. These responses indicate that students are able to recognize healthy food choices. While students can recognize healthy foods, it is vital that students implement this knowledge and live healthy lives. Based on their knowledge and understanding, students who participated in the focus groups were asked whether or not they were requesting different foods at home. Most focus group respondents said they were, and they responded that they are asking for more fruits and vegetables, and overall, they had a healthier diet at home. Examples include: asking to make dinner instead of go out, asking for less sugar, and saying "no" to McDonalds.

Did the program encourage students to advocate for healthy changes at home and help families make those changes?

Healthy eating

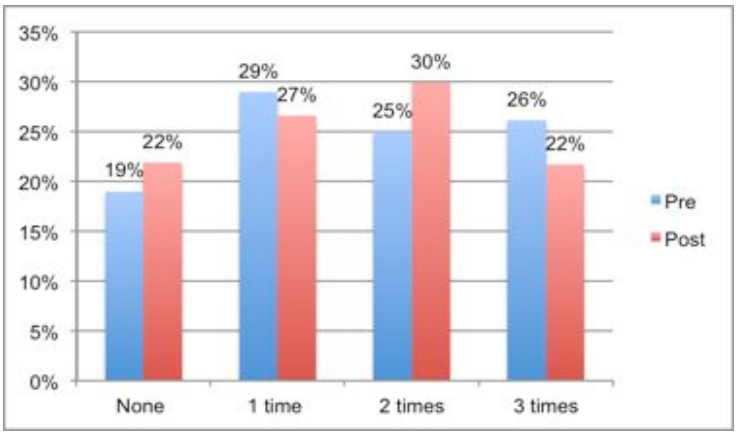
To help inform whether students are eating healthier as a result of P2H, students on the pre- and post-survey were asked how many vegetables they ate the previous day, with four possible response options, 0 = I didn't eat any vegetables, 1 = I ate vegetables 1 time yesterday, 2 = I ate vegetables 2 times yesterday, and 3 = I ate vegetables 3 times yesterday. The mean and standard deviation for the matched pre- and post-survey are detailed in Table 6 below, with both indicating that on average, students consumed vegetables one to two times a day (closely mirroring Year 1 trends). Although there was a slight decrease in vegetable consumption reported in the post-survey, this difference was not significant. Therefore, the decrease reported is most likely due to chance in the data versus a systematic decrease. This lack of significance should not be surprising as there was a lower effect size for this item reported in the Year 2 Student Report. The increased precision that this year's larger sample size provides most likely led to a non-significant finding in the current report.

Table 6: Students' Consumption of Vegetables

Question	Pre-survey (*n* = 544)		Post-survey (*n* = 544)	
	Mean	SD	Mean	SD
Yesterday, how many vegetables did you eat?	1.57	1.08	1.51	1.06

Table 6 reflects only the mean responses for this particular survey item. A breakout of all responses by categories in Figure 5 below reveals the distribution of consumption of vegetables is relatively similar between both the pre- and post-survey respondents. Almost 80% of all students had eaten vegetables at least once the previous day, while close to 20% did not have any vegetables.

Figure 5: All Students' Consumption of Vegetables



Family engagement in healthy eating and physical activity

Students were also asked to rate their perceptions of how engaged their families are in eating healthy and engaging in physical activity on the previously mentioned 4-point Likert scale. Table 7 details the means and standard deviations for responses to each statement on the matched pre- and post-surveys. Average rankings were the highest for *My family encourages me to be active* (*Ms* = 3.59 and 3.61, for the pre-post, respectively). Lowest mean ranking were recorded for the statement *I talk to my family about being healthy,* (*Ms* = 2.91 and 2.83, for pre-post, respectively). The lowest rated statement in Year 2 data represents a shift from Year 1, where, *I talk to my family about being healthy,* was rated the highest. Similar to Year 1, a paired-samples t-test was conducted for each statement. Ratings of the statement regarding the family encouraging the student to eat healthy significantly decreased (p= .03, η^2 = .01) from pre to post testing (see Table 7).

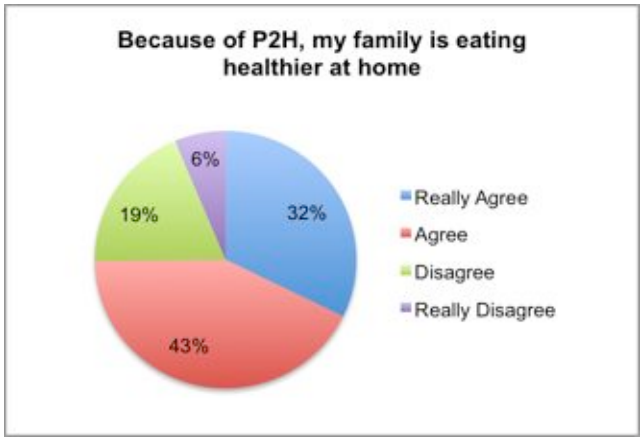
Table 7: Family Engagement in Healthy Lifestyles

Question	Pre-survey (*n* = 530-541)		Post-survey (*n* = 530-541)	
	Mean	SD	Mean	SD
I talk to my family about being healthy.	2.91	1.00	2.83	1.04

Question	Pre-survey (*n* = 530-541)		Post-survey (*n* = 530-541)	
	Mean	SD	Mean	SD
***My family encourages me to eat healthy.*	3.57	.69	3.49	.68
My family encourages me to be active.	3.59	.73	3.61	.71
My family encourages me to do physical activity.	3.45	.80	3.51	.76
I do physical activities with my family.	3.06	.96	3.09	.94

Further, students on the post-survey (*n* = 768) were asked to rate whether their families are eating healthier at home because of Passport to Health. Figure 6 reflects that 75% of students either Agree or Really Agree with the statement regarding their family eating healthier at home because of P2H.

Figure 6: Role of Passport to Health on Eating Healthy at Home



Finally, focus group data indicate that students were very likely to talk with their parents/families about things they learned or enjoyed in P2H. Students discussed a wide array of topics with their families including: how to be healthy, how the body works, what foods they should be eating, the importance of physical activity and why their parents shouldn't smoke or do drugs. A few students also indicated that they shared with their families about the P2H activities.

Students were most likely to discuss the desire to increase the level of physical activity at home, however, several students also mentioned that they were asking for healthier food options at home. Survey data supported that families were eating healthier overall and numerous students felt that the most important change at home was that their families were now eating more fruits and vegetables.

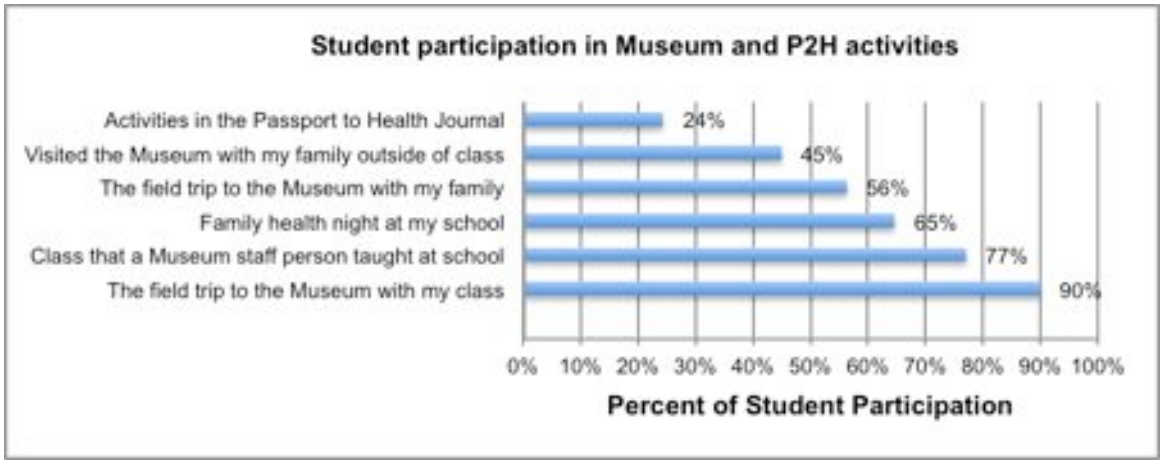
According to focus group participants, families of P2H students are making important changes in their lives because of what students are learning in P2H. In addition to the food changes noted above, students said their families were exercising more and doing more things together. A few students also commented on unhealthy habits their family members had quit. For example, one student said his/her uncle had quit smoking, and another said his/her father had quit eating junk food. While most students said their families were making changes for the better and that families had been very supportive of the information students brought home about health/nutrition/physical activity, P2H participants did offer suggestions for things their families

could do to be even healthier. The vast majority said their families could eat even healthier or be even more active. Other responses included their family members could quit smoking, or stop drinking.

Museum activities

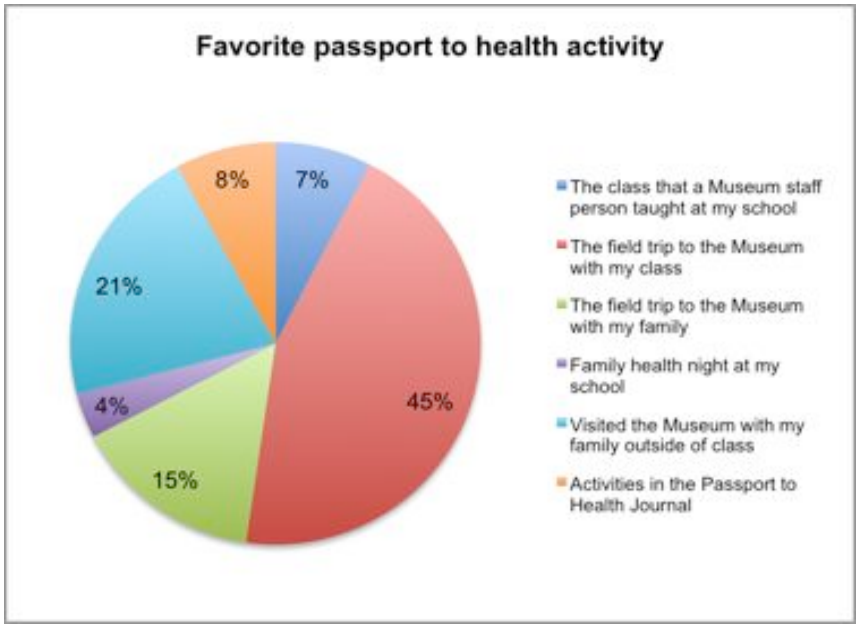
The post-survey asked students to identify the Museum and P2H activities they participated in during the year. Figure 7 reflects the percentage of post-survey respondents (*n* = 784) who participated in each activity. The activity that had the highest level of participation was the field trip to the Museum (with the students' class), followed by the class taught by the Museum educator at students' schools. These were the top performers in Year 1, as well.

Figure 7: Student Participation in Museum and Passport to Health Activities



Students were also asked to identify the one activity that was their favorite. As Figure 8 illustrates, 45% of post-survey students who answered this question (*n* = 606) liked the field trip to the Museum with their class the best, followed by field trip to the Museum with their family (21%).

Figure 8: Favorite Passport to Health Activity



Finally, focus group participants were asked what they would change to make P2H even better. While students reported overwhelmingly positive experiences with P2H, suggestions in the following areas were offered:

- **Museum Activities:** Many students expressed how much they enjoyed spending time at the Museum and expressed that the program would be improved by having more time and more activities at the Museum.
- **Active Activities:** Students enjoyed active parts of P2H and said they would like to have more activities that involve physical activity including getting up and running around, riding bikes, having a treadmill to run on, and using the pedometers more.
- **Journals:** Some students expressed that the journal was too hard and the program would be improved if it was easier. Comments included that the journal was confusing, they didn't like to write in them, and it was hard to figure out what to write.
- **How body works:** Some students felt the program would be improved if it included more information about how the body works. Some examples include: wanting more information about how food moves through the body, what exercise does for your body, and using real body parts to show how the body works.

Conclusion

The student surveys and focus groups provide insight into the knowledge, attitudes and actions of students and help the Museum understand how it is meeting its student outcomes as well as areas for continued growth. The results this year closely mirror those recorded in the Year 2 Student Report. Although this may be discouraging for some, achieving similar results is expected considering the consistency of the program delivery. The fact that the program was delivered to the same type of students, and there was a wide representation of students in the data (i.e., large sample size), large differences from year-to-year should not be expected. Although there were not many deviations from last year's results, the consistency of the data should communicate which findings are more reliable (e.g., increase in student activity level throughout the year and student's favorite P2H museum activities).

In addition, it should be noted that scale changes from last year's survey give the appearance of increased positive outcomes this year. However, this conclusion should be tempered as the survey used in 2010–2011 included a 4-point scale, whereas the 2009–2010 survey used a 3-point scale for most items. Quantitative trends reported below that closely match the Year 2 Student Report are indicated with an asterisk symbol (*).

Did the program increase health science content knowledge?

There are a number of indicators that help the Museum answer this question:

- The percentage of students who correctly answered questions on the student survey about the body and body systems increased from the pre- to post-survey (55% on post versus 47% correct on the pre-survey).*
- On pre- and post-surveys, students were asked to correctly identify the healthy food option from each of five healthy-unhealthy food pairings. Analysis revealed a statistically significant increase in student's ability to correctly identify healthy foods, from the pre-survey score of 4.23 (with 5 indicating 100% correct) to the post-survey score of 4.37.

- When asked to rate their level of agreement on the statement: *because of Passport to Health, I learned more in science this year,* 91.5% of students indicated that yes, they learned more in science this year because of P2H.*

- Student focus group participants were asked what was the most interesting or important thing they learned in P2H. Numerous students said that learning how the body works, the importance of staying healthy and the ways to be healthy were the most interesting or important things they learned in P2H.

Areas for growth or improvement

- As was noted in the report for 2009–2010, focus groups respondents, once again, indicated that they found science to be more interesting and engaging in fifth grade than in past years, noting they appreciated the hands-on nature of P2H, and they found science to be more interesting this year. Survey results, however, indicated a decrease in average student perceptions of whether they are interested in, and have fun, learning about science. As noted in the Year 2 Student Report, these negative results may be related to the timing of the survey (e.g., excitement for learning at the beginning of the year). In addition, ratings related to perceptions, such as interest and enjoyment, are constructs that can be difficult to reliably measure with youth. For example, the lack of positive results could be related to science experience in fifth grade. This possibility would leave fifth graders with somewhat inflated ratings on the pretest, and ratings based on fifth-grade realities on the posttest.

Did the program increase recognition of the value of physical activity, healthy foods and healthy lifestyles?

The following results help answer this question:

- According to the pre- and post-survey data, there was a statistically significant increase in the number of times students engaged in something that made their heart beat faster and made them breathe hard in the last week.* Additionally, 54% of all post-survey respondents indicated that they were active seven or more times in the previous week (48% on the pretest).

- Eighty percent of post-survey student respondents indicated they are doing more physical activities and living a healthier lifestyle because of P2H. Additionally, focus groups respondents indicated they now have a better understanding of what happens to your body when you are not active.

- There was a statistically significant increase in students' ratings of the importance of doing physical activities. Agreement with the statement: *It is important to do physical activities*, significantly increased between the pre- and post-surveys.

Areas for growth or improvement:

- Although results over the last two years suggest that students are showing an increase in the value they place on physical activity, the Museum should continue to look for options to expand this interest further. Incorporating additional value-building information into the activities that the students already value would be a great place to start. In addition, leveraging other Museum activities that reach a wider age range would also allow for a more comprehensive approach to developing this knowledge and value among youth. Widening this information to other areas would also allow health-related information to become more normative in the child's day-to-day educational experience.

Did the program encourage students to advocate for healthy changes at home and help families make those changes?

The following information helps address this question:

- The average rating by pre- and post-survey respondents to the statement: *Eating healthy foods is important for my body,* was very high with pre- and post- means of 3.82 and 3.79 out of 4, indicating a high level of knowledge about the importance of eating healthy. However, when asked to rate the statement: *I like eating healthy foods,* analysis revealed a statistically significant decrease in student perceptions between the pre- and post-survey, with pre- and post- means of 3.38 and 3.30.* While students understand the importance of eating healthy, they do not necessarily *like* eating healthy. This decrease may at least be partially attributed to the perception of healthy food tasting bad. Ratings of the statement: *Healthy foods can taste good*, scored lower overall, and significantly decreased from pre- to post-survey (3.35 and 3.21, respectively). Although not a significant decrease, Year 2 also saw lower ratings of the same statement.

- Seventy-five percent of post-survey respondents indicated their families are eating healthier at home because of P2H (43% in Year 2, on a 3-point scale). This was reinforced by focus group participants who were asked whether they were requesting different foods at home. Most said that they were, and changes included asking for more fruits and vegetables, less sweets and overall having a healthier diet. These comments offer a clear shift from Year 1 where only a handful of students indicated they were asking for more fruits and vegetables at home.

- Focus group participants indicated they are likely to talk with their parents/families about things they learned in P2H, including the importance of exercise, healthy food, how to be healthier and the human body. In direct opposition to the Year 2 report, students rated the statement: *I talk to my family about being healthy,* the lowest with means of 2.91 and 2.83 on the pre- and post-surveys, respectively. This is telling, as these are almost the same means recorded in the Year 2 Student Report even though the current report uses a different scale.

Areas for growth or improvement:

- While data reflect students are talking with their families more about food, physical activity and healthy lifestyles, it is not entirely clear whether families are making changes based on the discussion. The Museum should continue to explore how to expand the reach of P2H to the family, and discuss ways to measure this reach. A survey or focus group with family members that focuses on healthy behavior change could go a long way in informing the current report.

- In addition, encouraging more families to become more involved in the program may lead to more conclusive outcomes. For example, encouraging families to advantage of their free family membership would provide an opportunity to educate families. The Museum could develop additional materials encouraging families to visit. Included with these materials could be a suggested itinerary that includes health facts related to their home-life, their child's P2H experience at school, and their potential trip to the Museum. Because P2H represents only a small fraction of the family's time, the more materials can include activities away from school, the higher the potential for systemic, health-related change.

DENVER MUSEUM OF NATURE & SCIENCE

Appendix II: Passport to Health Year 3 Teacher Report

Summary of Surveys and Interviews

Submitted July 22, 2011 By:

JVA CONSULTING, LLC
partners in community and social change

Introduction

In spring 2009, the Denver Museum of Nature & Science (the Museum) opened a new health science exhibit, *Expedition Health*, which stems from the Museum's new Health Science Initiative and replaces the *Hall of Life* exhibit that was an integral part of the Museum for many years. To add a key education component to complement this exhibit, the Colorado Health Foundation (the Foundation) provided a generous grant to fund the development and implementation of the Passport to Health program (P2H). P2H was originally a three-year program with one year for design and two years for implementation. However, a no-cost extension is allowing for three years of implementation. The Museum designed the program to help improve health outcomes for fifth-grade students as well as their families and teachers at 30 low-income schools in the Denver metro area. The Museum contracted with JVA Consulting, LLC (JVA) to conduct a comprehensive evaluation of P2H, including two key components: a process evaluation to examine the program design and implementation, and an outcomes evaluation to measure the program's abilities to meet its overall objectives. JVA is utilizing multiple methods to collect both quantitative and qualitative data that will provide the Museum, the Foundation and other stakeholders with important insight into the progress of the program and its outcomes. The evaluation and its ongoing findings will enable the Museum to make informed decisions in program refinement and track ongoing program accomplishments. This report helps inform the outcomes evaluation by providing insight into the effects of the program on teachers. It also provides insights from the teachers' perspectives about how the program affected students and their families.

Through P2H, teachers received health science curriculum support from the Museum education and outreach teams and were exposed to professional development through the Teacher Workshop and continuing education programs, such as the Online Course and online curriculum guides. By implementing the program components and achieving the desired outputs, the Museum hopes that teachers will achieve the following outcomes:

1. Increase their health science content knowledge
2. Better understand the implications of the benefits from student involvement in physical activities
3. Increase use of the Museum's resources with their students

This report aims to answer the following three questions, which relate to teachers:

- *Did the program increase health science content instruction and knowledge?*
- *Did the program increase recognition of the value of physical activity, healthy foods and healthy lifestyles?*
- *Did the program increase teachers' use of Museum resources?*

Methodology

JVA, in coordination with the Museum, utilized a mixed-methods approach to collect quantitative and qualitative data from teachers to inform the evaluation. The following methods were utilized in the teacher evaluation:

Pre- and post-surveys

JVA administered teacher pre-surveys while administering the pre-surveys to students, prior to beginning P2H programming. In total, 57 teachers completed the survey. Near the conclusion of the 2010–2011 academic year, and after all program components had been completed, a post-survey was delivered to the same teachers. Forty-one teachers completed the post-survey. Using a unique identifier, evaluators were able to successfully match the pre- and post-surveys of 34 teachers. Enough successful pre-post matches were made to draw comparisons of pre/post survey changes. Of those teachers paired, 75.8% (n = 25) indicated they taught fifth grade in the 2009–2010 school year. Additionally, the average number of years respondents had been teaching for was 5.91, and the average number of years they had taught fifth grade was 3.05. These averages are lower than teachers surveyed in Year 1, which is most likely due to changes in design of the analysis (see below for description).

Individual interviews

In order to provide more detailed feedback and recommendations to the Museum, JVA conducted individual interviews via telephone with 12 P2H teachers from all four participating districts in May and June 2011.

Study limitations

These methods were selected to obtain information about the implementation and effect of P2H on teachers. However, it is important to note the limitations to each method and the impact on analysis. First, the survey was designed to gather pre- and post-data from the same individuals with the intent of conducting statistical analysis to determine the extent and significance of change in behavior and knowledge. Although paired-sample designs allow for precise individual changes to be mapped, there are some limitations. Factors such as practice effects, teacher maturation (especially growth on dimension related to efficacy and knowledge, as discussed later), and group-dependent variables can impact the data. For example, teachers who were willing to participate in the survey at the beginning of programming, and at the end of the year may be more engaged teachers overall, and therefore more likely to report positively about the program. Positive results would then be more about personal predispositions rather than about unique program factors. However, all designs have a downside, and evaluators chose the most appropriate one considering all factors.

A different research design was used for the analysis in the Year 2 Teacher Report. Last year, pre-post comparisons were made between independent groups, whereas the current analysis utilizes a matched pre-post design where a teacher's pre-survey is matched with his/her post-survey. Considering this change in design, caution should be exercised when comparing data from last year's report to trends reported herein.

Additionally, while the teacher pre-survey in Year 1 was conducted in conjunction with the teacher summer workshop, which was open to fifth-grade teachers and specials teachers, such as physical education, and math and science facilitators, pre-surveys in Year 2 were conducted in conjunction with the student pre-surveys, in the classroom. Thus, while Year 1 pre-survey respondents were not isolated to simply fifth-grade teachers, which may have influenced the results, Year 2 pre-survey respondents were all fifth-grade P2H teachers.

Finally, interviews provide a forum to learn rich information from individuals. However, it is important to keep in mind that the findings from interviews represent the unique situations and perspectives of only those individuals who participated.

Analysis

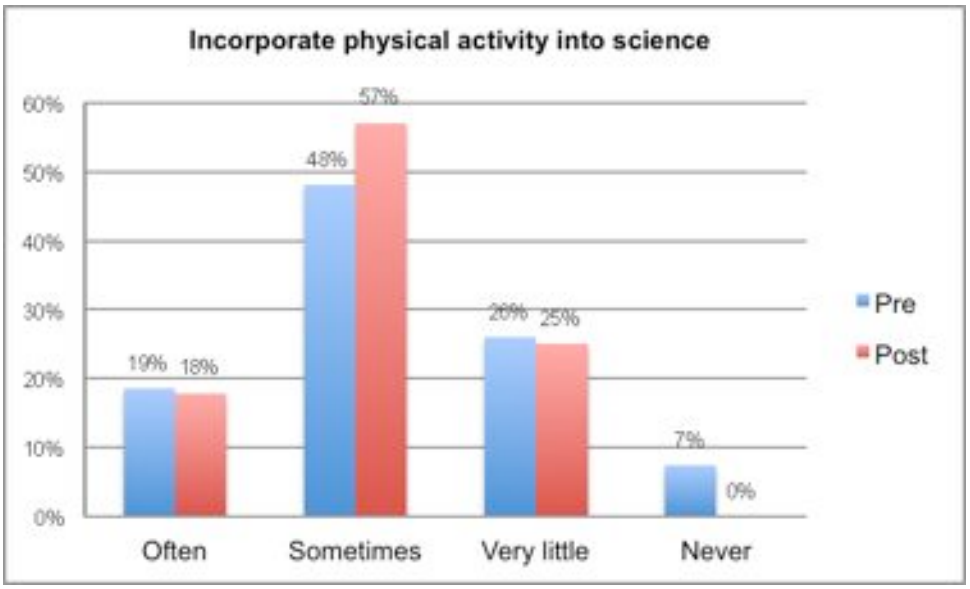
Did the program increase health science content instruction and knowledge?

Lesson plans utilizing health science concepts

Both the pre- and post-surveys included a series of general questions to learn whether teachers incorporated physical fitness and nutrition into science lessons as well as whether they incorporated health science concepts into lessons outside of science.

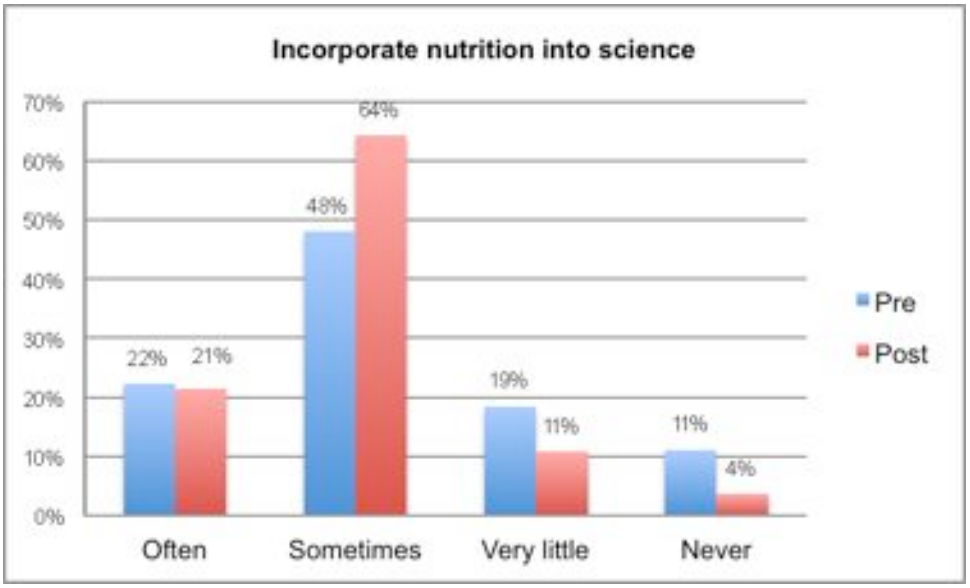
Respondents were asked how often they incorporated **physical fitness** into science lessons in the previous and current school years, on the pre- and post-surveys, respectively. Although the increase in mean ratings of physical fitness incorporation (*M*s = 2.78 and 2.89 for pre- and post-survey, respectively) was not significant, there are some distinctions to be made in the data. Figure 1 demonstrates positive gains in frequencies of responses, with post-survey responses showing a *combined* increase in the percentage that indicated Often or Sometimes (75% on the post-survey versus 67% on the pre-survey). Equally important, is the *lack* of post-survey responses that indicated Never. This is an important distinction to make as this suggests that at the end of the P2H programming cycle, all teachers incorporated some form of physical fitness into their lessons.

Figure 1: Percentage and Frequency of Respondents Who Incorporated Physical Fitness Into Science Lessons



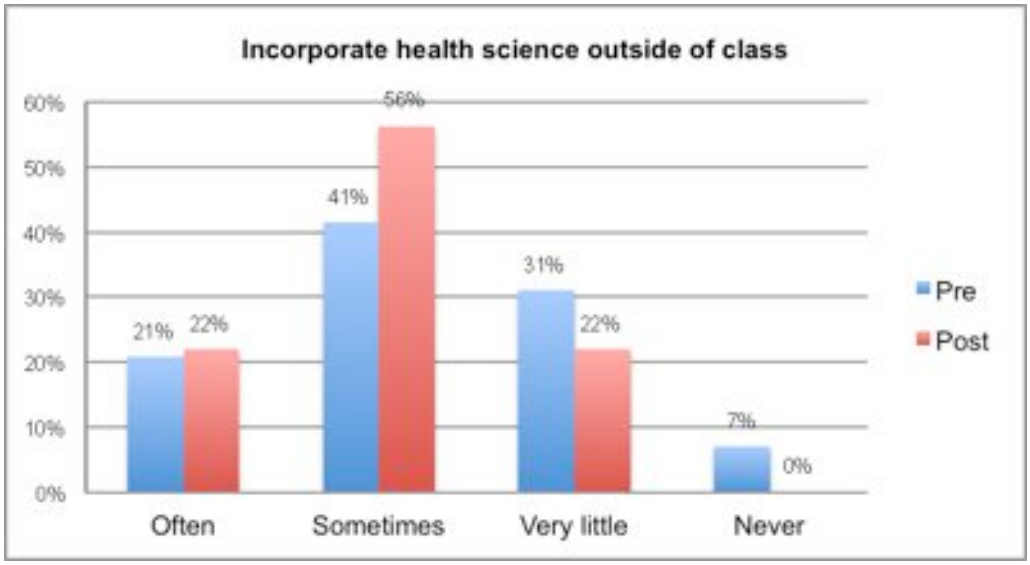
Similarly, teachers were asked how often they incorporated **nutrition** into science lessons during the previous and current school years on the pre- and post-surveys, respectively. Although mean ratings on this measure increased (2.81 versus 3.04, on the pre and post, respectively), this increase was not significant. However, Figure 2 reveals that there were some positive gains made throughout the year as indicated by an overall increase in Sometimes or Often responses (85% on post survey versus 70% on the pre-survey). This trend is similar to the incorporation of physical fitness discussed above, with increases seen in the percentage of Often or Sometimes and decrease of Very little and Never ratings on the post-survey.

Figure 2: Percentage and Frequency of Respondents Who Incorporated Nutrition Into Science Lessons



Finally, teachers were asked how often they incorporated **health science** concepts into lessons outside of science (such as in math or literature lessons) during the previous and current school years on the pre- and post-surveys, respectively (see Figure 3). Mean ratings on this item increased from 2.76 to 3.00, but this change was not significant. When compared to their pre-survey responses, a higher combined percentage (78% post, versus 62% pre) of respondents incorporated health science concepts into non-science lessons Sometimes or Often. Once again, there were no post-survey respondents who chose Never, indicating that *all* surveyed teachers incorporated some form of health science outside of science by the end of the year.

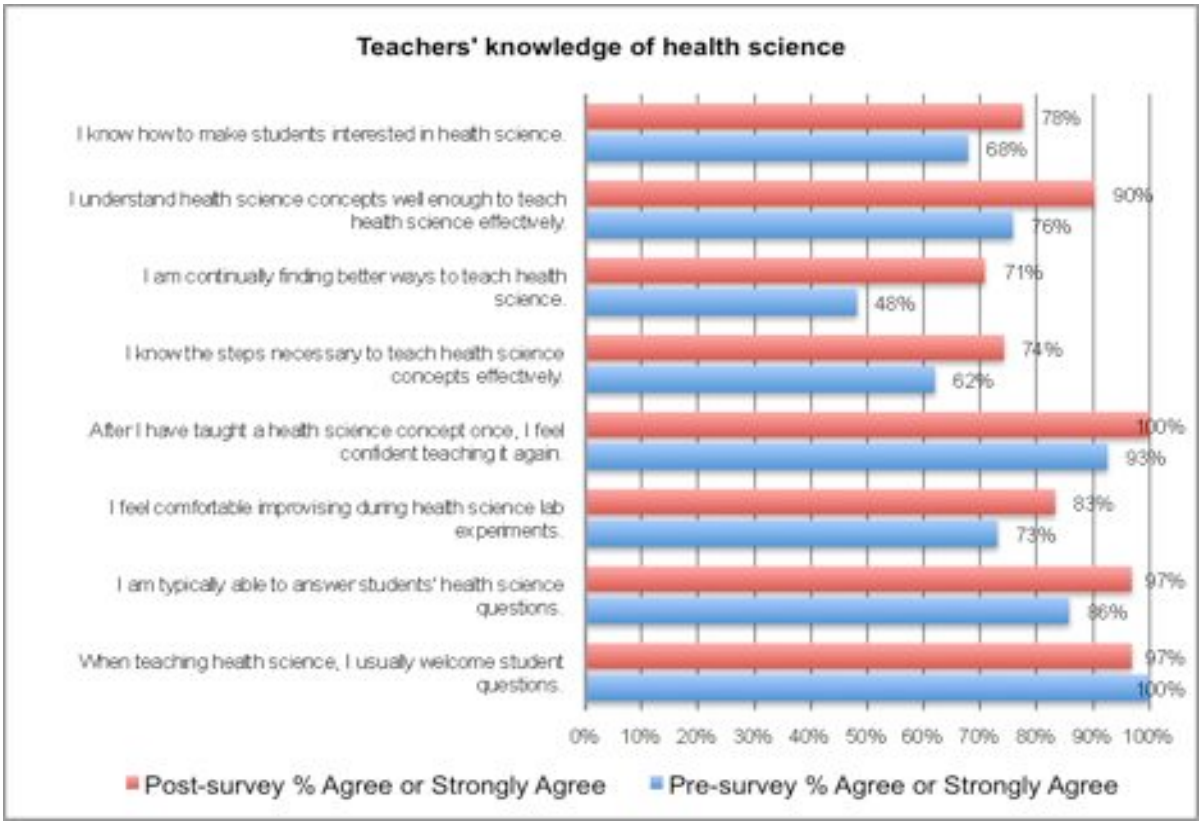
Figure 3: Percentage and Frequency of Respondents Who Incorporated Health Science Concepts Into Lessons Outside of Science



Knowledge and teaching efficacy

Teachers were asked on both the pre- and post-survey to indicate the extent to which they agree or disagree with a series of statements dealing with concepts focused on science-related teaching and knowledge.[14] Figure 4 illustrates the percentage of respondents who Agree or Strongly Agree with statements pertaining to knowledge efficacy. As illustrated, for most measures on this scale, teachers rated their agreement higher on the post-survey. There was one measure in which there was no post-survey improvement (i.e., welcoming student questions). However, pre-survey ratings of this item were already very high (i.e., 100%), and therefore, there was little room for improvement. This is often called a "ceiling effect" and is quite common in scales of this nature. To further test this increase of knowledge from pre- to post-survey, a composite score was created averaging all the items listed below to create a "knowledge score" for each teacher. Significance testing comparing this score on the pre- and post-survey reveals that teachers significantly (p = .03, η^2 = 01[15]) improved on health science knowledge over the course of the year (Ms = 3.91 and 4.09 on pre and post, respectively).

Figure 4: Teachers' Knowledge of Health Science

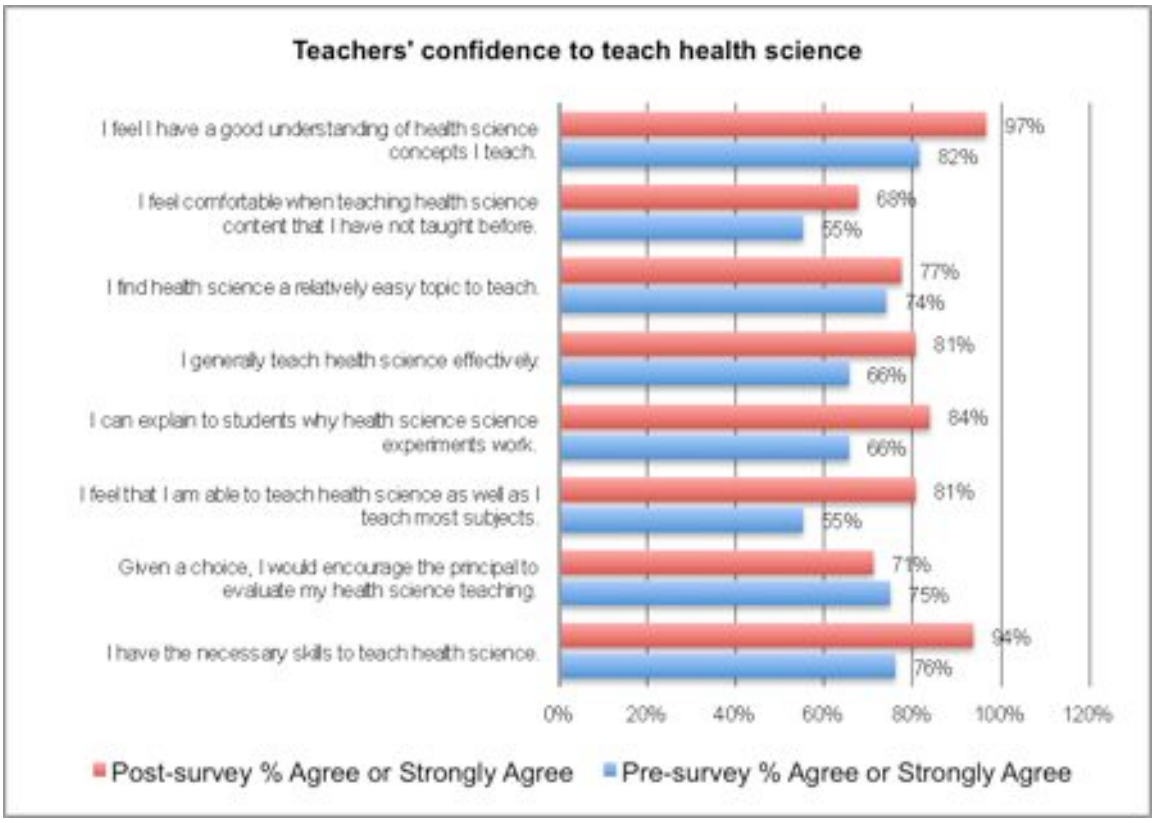


[14] Questions taken from the SETAKIST survey published in: Roberts, Kyle and Henson, Robin K., "Self-Efficacy Teaching and Knowledge Instrument for Science Teachers (SETAKIST): A Proposal for New Efficacy Instrument." Presented at the Annual Meeting of the Mid-South Educational Research Association (28th, Bowling Green, KY, November 17-19, 2000).

[15] η^2 or eta-squared, is a measure of "effect size" or degree of difference in data that is attributable to your experimental delivery. Simply put, it is an approximation of the unique impact your program had on the data. Eta-squared can indicate a small effect (.01), medium effect (.06), or large effect (.14). Smaller effect sizes indicate that are a number of other factors impacting your data, and therefore, data should be interpreted with caution.

Figure 5 illustrates survey respondents' level of agreement with statements pertaining to teaching efficacy. Comparing pre-post mean ratings of combined items (i.e., a "teaching efficacy" composite score), ratings on this measure did not significantly change. However, most items did show improvement when comparing pre-post ratings for scores that combine the percentage of teachers who chose Agree or Strongly Agree.

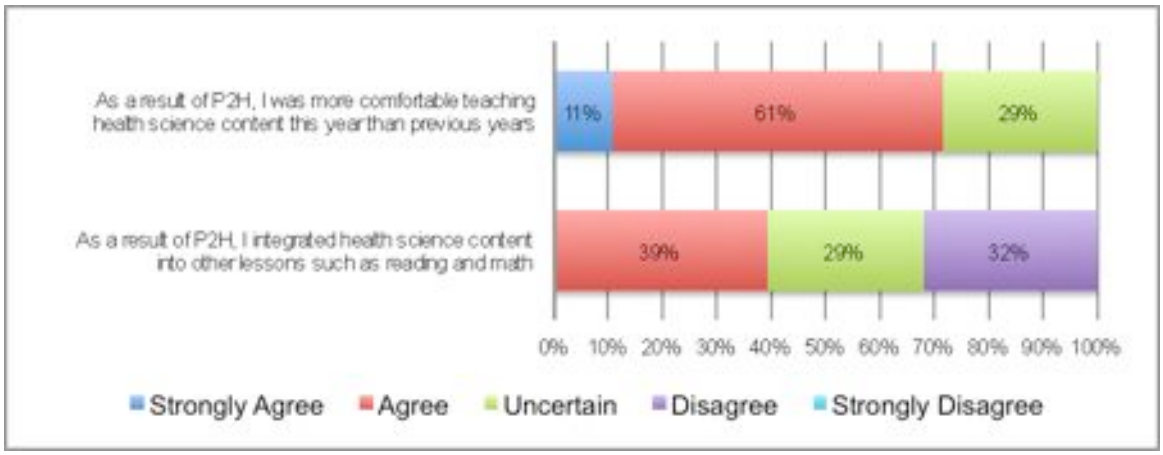
Figure 5: Teachers' Confidence to Teach Health Science



Impact of Passport to Health on instruction

Through P2H, the Museum sought to increase health science content knowledge among teachers. To better understand how P2H impacted teachers' instruction, the post-survey included questions about teachers' integration of health science content into non-science lessons, as well as their comfort level with teaching health science as a result of the program. As Figure 6 illustrates, 72% of teachers Agreed or Strongly Agreed that, as a result of P2H, they were more comfortable teaching health science content this year than in previous years (69% in Year 1). Teachers' integration of heath science material into other content areas (e.g., math and reading) did not score as well as in Year 1 with only 39% of post-survey respondents agreeing that they integrated health science content into other lessons specifically because of P2H. In addition, 32% Disagreed or Strongly Disagreed with this statement. The level of disagreement (or lack of agreement) on this item may be discouraging for P2H programmers, however, these numbers represent an improvement over last year, where fewer teachers Agreed with the statement (33%) and more Disagreed with the statement (42%). When measures do not perform as expected, it is often helpful to review previous trends. Because this measure shows a positive gain when compared to last year, programmers should discuss ways to continue these gains in future years.

Figure 6: Impact of Passport to Health on Instruction

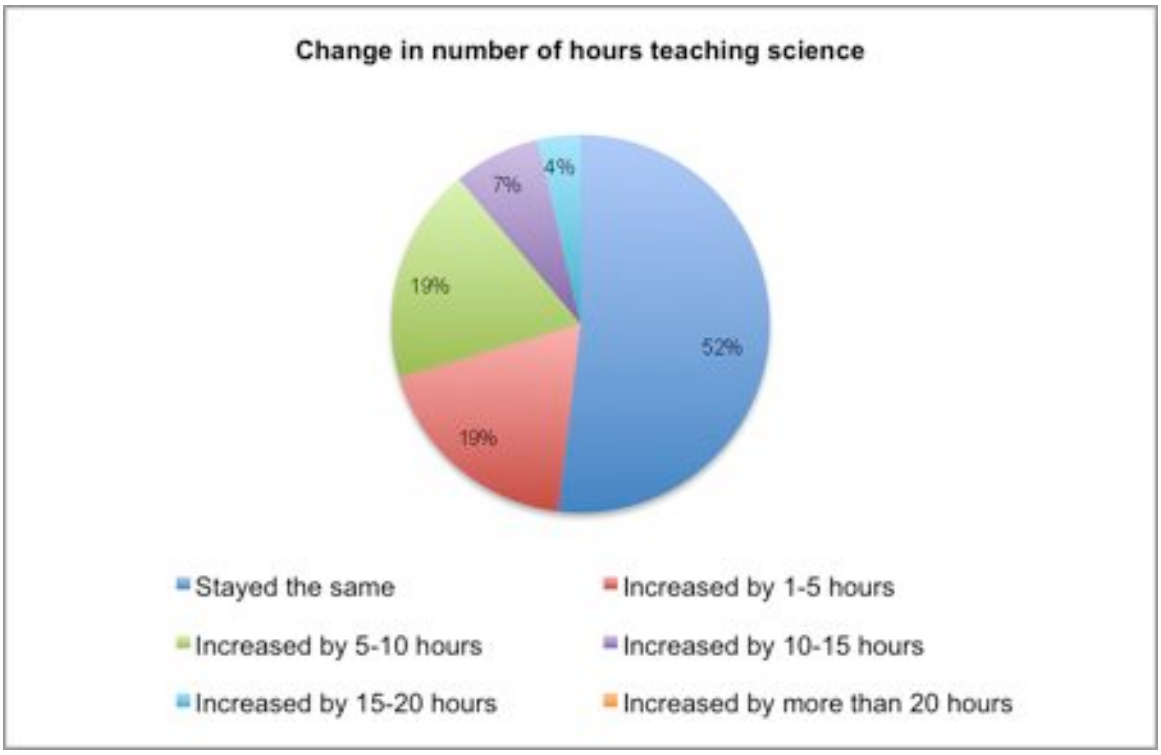


Interview respondents were also asked whether they were able to integrate health science into their non-science teaching and whether it gave them more confidence to teach it. Interestingly, the majority of P2H teachers who participated in interviews said they were able to incorporate P2H into non-health science teaching. Of these respondents, three specified that they integrated P2H lessons into math classes, and one into other relevant health lessons. Only three interview respondents specifically said they did not integrate health science into non-science teaching, and of those, two mentioned inflexible districts and strict curriculum guidelines as the reason they didn't. One interview participant said: *"I was able to integrate health sciences during transition times, but it didn't really impact other subject areas."* When respondents were asked what made P2H easy to integrate, responses were varied, but 38% of respondents (*n* = 3) said P2H aligned well with district curriculum and other programs taking place, 25% (*n* = 2) mentioned the flexibility of the P2H curriculum and the ability of teachers to connect it with multi-subjects, finally, one participant said the P2H curriculum is quick and easy, making it easy to integrate.

When asked if P2H gave them more confidence in their abilities to teach health science, 66% of teacher interview respondents (*n* = 8) said yes. Further, while four respondents did not feel P2H increased their confidence, 75% of them (*n* = 3) said P2H gave them a renewed interest in health science, gave them new or creative tools to implement health science curriculum and reinforced their focus on health science.

Finally, the post-survey asked teachers whether the number of hours they spent on teaching or focusing on science curriculum changed as a result of P2H. As illustrated by Figure 7 below, 48% of respondents indicated the number of hours they spent teaching science curriculum increased, with every 1 in 3 teachers (30%) reporting that their time spent in science increased more than five hours. These rates represent a notable shift from numbers reported in the Year 2 Teacher Report, where 71% of teachers reported an increase. It is hard to determine the root of these changes as the data analysis procedures have changed, however, P2H should discuss what alterations from last year could have created to this change (whether related to P2H or not). One possibility is that the teachers included in the current report may have been a part of P2H in Year 1. If this is the case, teachers may have compared their 2010–2011 increase to increases already realized in 2009–2010, creating a higher baseline for comparisons. Another possibility is the natural shifting of teacher priorities. In the current educational climate, it is hard to determine the impact that local, state and federal policies have on teachers' lesson content and time spent in the classroom.

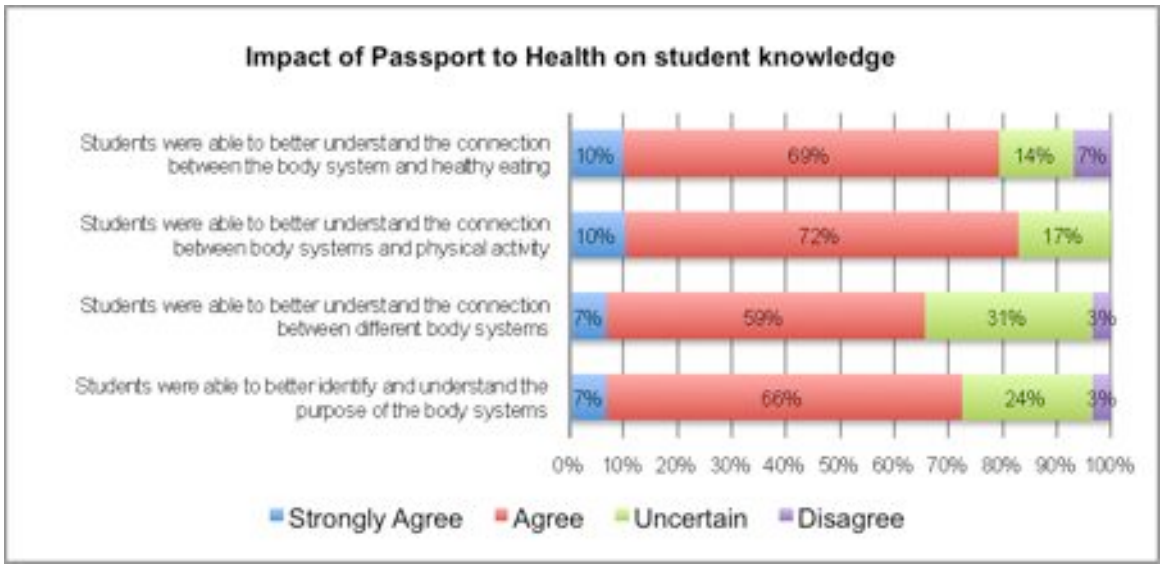
Figure 7: Change in Number of Hours Teaching Science



Impact of Passport to Health on students' understanding of health science concepts

To better understand the impact of P2H on teacher instruction and student knowledge, teachers were asked (on the post-survey only) whether students who participated in P2H had a better understanding of body systems and healthy eating compared with similar groups of students. To gauge this, teachers were asked how strongly they agreed or disagreed with a series of statements. As illustrated by Figure 8, a moderately high percentage of teachers Agreed or Strongly Agreed with each statement about the level of knowledge of students who participated in P2H this year compared with similar groups of students the teachers had taught this content to (66% or higher chose one of these two options for each statement). For example, 82% of teachers Agreed or Strongly Agreed that students who participated in P2H were able to better understand the connection between body systems and physical activity than other groups of students their age. This item received the highest rating when combining percentage of teachers who chose Agree or Strongly Agree. It should be noted that this item was also rated the highest in Year 1.

Figure 8: Impact of Passport to Health on Student Knowledge



Interview respondents were also asked how P2H affected their students, specifically whether it impacted their understanding of body systems or the way they approached science.

Overall, 75% of interview respondents (*n* = 9) said their students were better able to identify body systems this year and understand the connection between body systems. Despite perhaps having a better understanding of this component of science, teacher interview respondents were less sure about how P2H affected the way their students approached science. While 50% of respondents (*n* = 6) said the hands-on nature of P2H helped make science more fun and helped their students to be more excited about and engaged in science, 33% of respondents (*n* = 4) said P2H did not affect the way their students approached science.

Did the program increase recognition of the value of physical activity, healthy foods and healthy lifestyles?

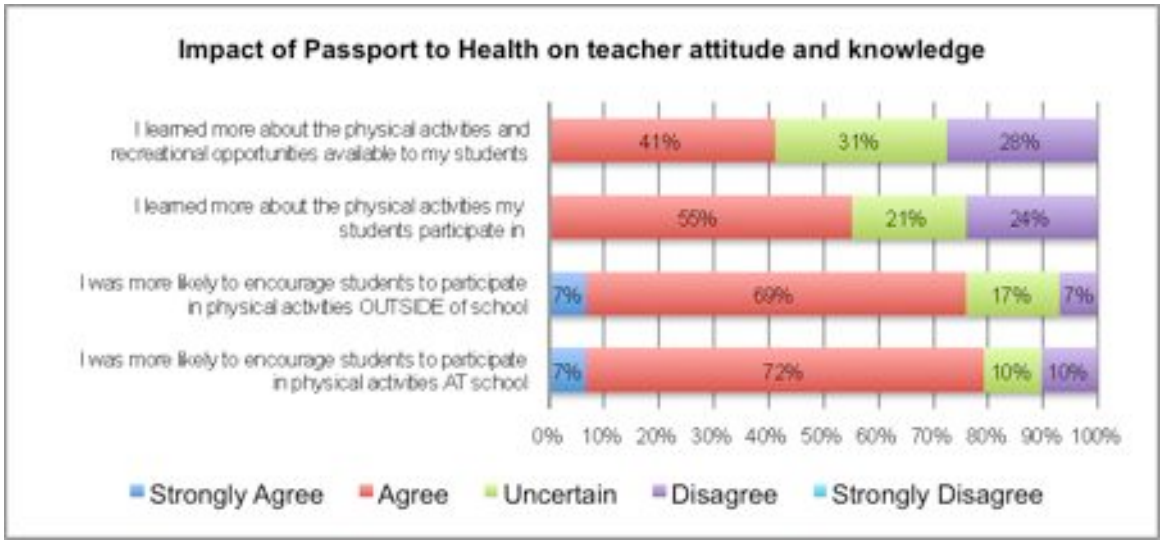
The Museum also hopes that teachers will better understand the benefits associated with increased student involvement in physical activities. The pre- and post-surveys asked a series of questions to learn how often teachers encouraged physical activity, as well as to determine their knowledge of physical activities and resources available to students.

Impact of Passport to Health on teachers' attitude and knowledge

The post-survey asked teachers to rate their level of agreement with a series of statements to better understand whether they were more likely to encourage physical activity as a result of P2H. It also included similar statements to learn whether as a result of P2H they learned about physical activities and resources available to students and whether their students participated in them. According to data in Figure 9, 79% (62% in Year 1) of teachers Agreed or Strongly Agreed they were more likely to encourage students to participate in physical activity at school and 76% (56% in Year 1) Agreed or Strongly Agreed they were more likely to encourage physical activity outside of school as a result of P2H. Fifty-five percent (60% in Year 1) of post-survey respondents also Agreed they learned more about the physical activities their students participate in this year as a result of P2H. However, only 41% Agreed they learned more about physical activities and recreational opportunities available to their students as a result of the

program. Once again, this decrease from Year 1 rates may be impacted by teachers' previous experiences with P2H leading to higher baselines to which comparisons are being made (as discussed earlier). Because it is still early in P2H programming, it will continue to be difficult to accurately determine causes for differences in the data.

Figure 9: Impact of Passport to Health on Teacher Attitude and Knowledge

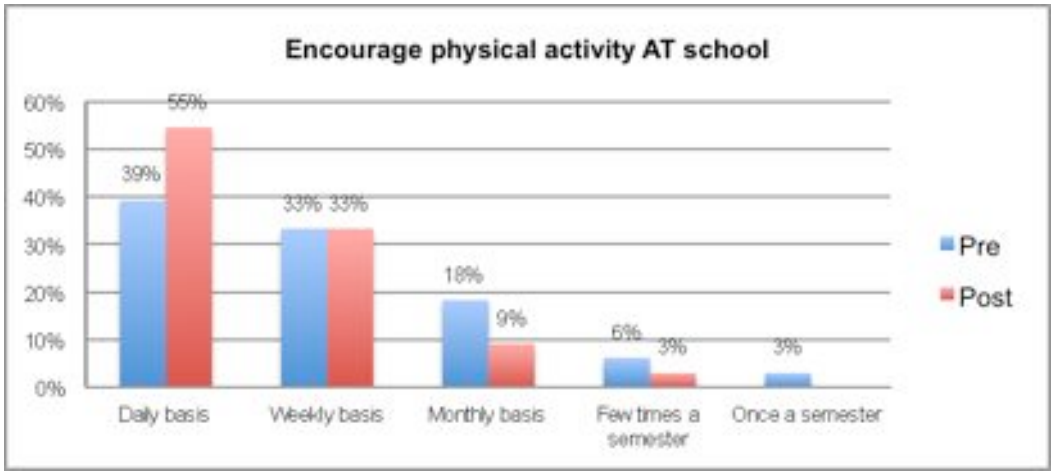


Encouragement of physical activity and student use of resources

The pre- and post-surveys also included a series of questions to learn how often teachers encourage students to participate in physical activity and their level of knowledge about resources available to students outside of school.

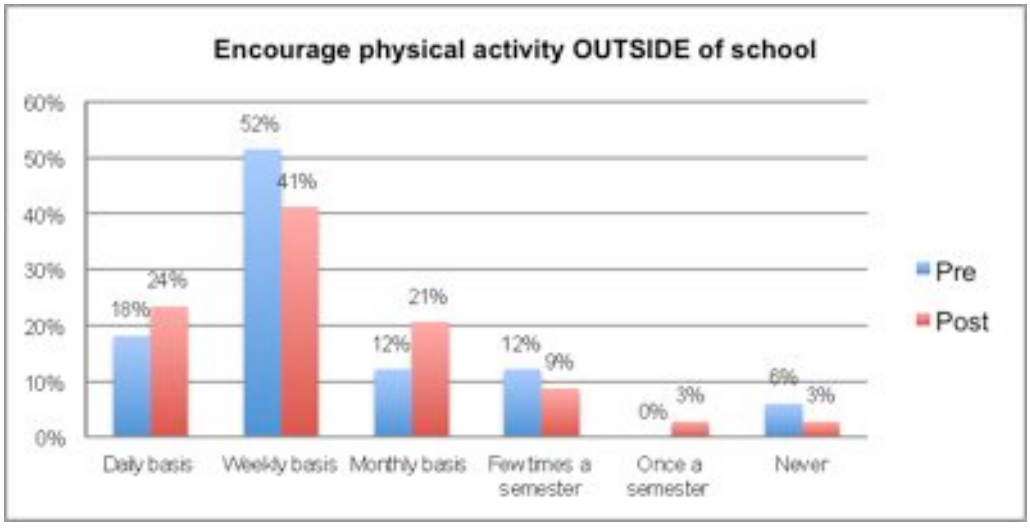
An item on both the pre- and post-survey asked teachers to indicate in the previous and current school years, respectively, how often they encouraged students to participate in **physical activity at school**. Teachers could choose from a predetermined frequency of time categories ranging from On a daily basis to Never. To test for significant pre-post change on this measure, researchers assigned values to frequency categories with On a daily basis = 5 and Never = 0. From these scores, mean ratings could be derived in which significance testing was run. Results indicate that there was a significant increase (p = .03, η^2 = 01) in the amount of encouragement teachers gave students regarding physical activity at school (*Ms* = 4.03 and 4.38 for pre- and post-survey, respectively). Figure 10 illustrates the percentage of respondents who replied to each frequency category. Thirty-nine percent of teachers on the pre-survey and 55% of teachers on the post-survey encouraged their students to participate in physical activity at school on a daily basis, and 33% of teachers on both the pre- and post-survey encouraged students on a weekly basis.

Figure 10: Percentage and Frequency of Respondents Who Encouraged Physical Activity AT School



Similarly, teachers were asked on the pre- and post-surveys to indicate in the previous and current school years, respectively, how often they encouraged students to participate in **physical activity outside of school**. Results indicate that there was not a significant change from pre- to post- measurement on this item. Figure 11 illustrates this lack of significant change further, as there is very little directionality to the data with some categories increasing post measurement (i.e., Daily basis) and other similar categories decreasing post measurement (i.e., Weekly basis). To demonstrate this point further, comparisons of pre-post mean ratings indicate a negligible mean difference of .03 (*Ms* = 3.58 and 3.61 for pre and post, respectively).

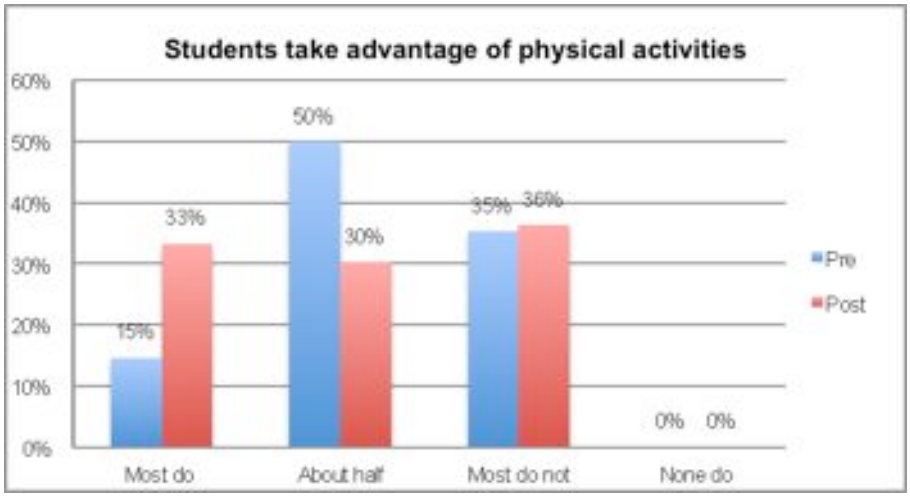
Figure 11: Percent and Frequency of Respondents Who Encouraged Physical Activity OUTSIDE of School



Teachers were also asked in both surveys whether they thought students at their schools take advantage of physical activities and resources (such as parks or recreation centers) outside of school that are available to them. Figure 12 illustrates the percentage of teachers who think their students take advantage of physical activities. As illustrated, 50% of the pre-survey respondents and 30% of the post-survey respondents think that only about half of the students take advantage of resources outside of school. Additionally, 35% of teachers on the pre-survey

and 36% of teachers on the post-survey think that most students do not take advantage of these resources. Although there were not significant gains on this measure, there are encouraging findings. The percentage of teachers who indicated that most students engage in physical activities outside of school more than doubled from pre to post measurement (15% and 33%, respectively). The lack of stronger change may be due to the timing of the measurement (summer vs. spring), familiarity with the students (with more familiarity during post measurement), and teachers' perceptions of what a "physical activity" constitutes. These factors are beyond the scope of the current project, however, they can be measured and controlled for in future studies.

Figure 12: Percentage of Respondents Who Think Students Engage in Physical Activities Outside of School



Further, teachers were asked to rate their knowledge of physical activities and resources available to students outside of school on both surveys on a five-point Likert scale, where 1 = Non-existent and 5 = Extensive. There was a significant increase in teachers' knowledge of resources when comparing pre- and post-survey ratings (p = .03, η^2 = 01). Teachers' mean ratings of this item increased from 2.94 on the pre-survey to 3.24 on the post-survey. Not only are these means significantly different, but they fall on opposite sides of the scale with average post-survey ratings falling toward the "Extensive" side of the scale (i.e., score above 3) and average pre-survey ratings falling toward the "Non-existent" side of the scale (i.e., scores below 3).

Additionally, interview respondents were asked if they noticed changes in the food students were eating, or in the amount of physical activity they did. As previous data have shown, while students may have been better able to understand the connection between the body systems and healthy eating (as illustrated in Figure 8), 50% of teacher interview respondents (n = 6) said they did not notice their students making changes in the foods they eat. Several respondents said that their schools were also participating in external food or nutrition programs and that those, in conjunction with P2H, may have affected some students, but that overall change was not noticeable. Three respondents did note that their students seemed to be more aware and conscious of their food choices this year, so while they might not have made different food choices, they were aware of what they should have been eating. Not surprisingly, three respondents specifically mentioned the fact that, as one teacher put it, "*Those Hot Cheetos are engrained in them!"*

Finally, teacher interview respondents were asked if P2H was impacting the amount of physical activity their students were doing. While three respondents (25%) did not think their students were more active as a result of P2H, 42% of respondents (*n* = 5) said their students were more physically active. Two respondents specifically mentioned the value of the pedometer activities, and one said that P2H, in conjunction with other school initiatives, was encouraging students to be more physically active. Again, supporting the data in Figure 8, three interview respondents said that their students were talking about the connection between physical activity and body systems, but these teachers were not sure whether students were actually making changes. Finally, a couple of interview respondents mentioned that while their students did appear to be more physically active this year, it was not clear whether that change could be attributed to P2H, or to other factors.

Did the program increase teachers' use of Museum resources?

Overall use of the Museum and Passport to Health resources

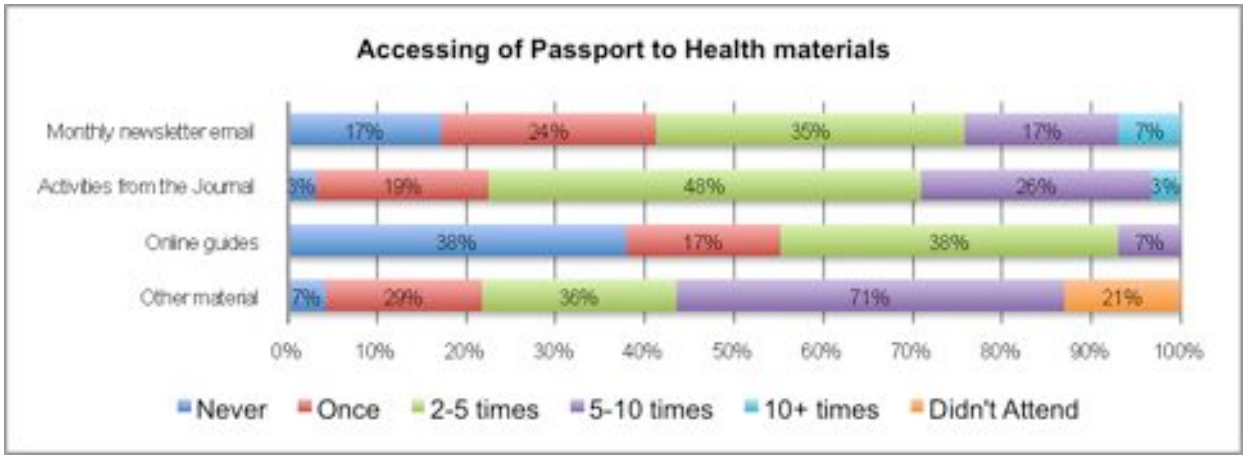
The Museum provides resources for teachers at the Museum and on its website. On the pre-survey, teachers were asked whether they had used Museum resources in the previous two years. Additionally, post-survey respondents were asked whether they had used Museum resources outside of their association with P2H. Table 1 details the percentage of respondents from both the pre-survey and post-survey groups who had used the museum resources. As reflected in the Table, six out of eight resources saw increased use when the teachers were surveyed at the end of the year (i.e., post-survey). Professional development and free previews were the only resources that decreased from pre- to post-measurement. Free previews may have decreased due to teachers getting increased Museum and/or P2H exposure elsewhere. For example, 100% of respondents indicated they visited the Museum with their class, and four out of five teachers (79.4%) indicated that they participated in the pre-visit activities. The use of other resources is most likely leading to a bit of saturation in which teachers feel they are getting enough elsewhere and don't have to use all resources at their disposal. Now that the Museum has two years worth of data, perhaps program personnel can discover new ways to increase use of under-utilized resources, or replace these resources with other items teacher may call on more frequently.

Table 1: Respondents Who Used Museum Resources

Museum Resource	% of pre-survey respondents who used it (*n = 34*)	% of post-survey respondents who used it (*n* = 34)
Online guides	29%	41%
Museum visits w/class	74%	100%
Pre-visit activities	62%	79%
Professional development	41%	29%
Exhibit activity guides	35%	50%
Free previews	32%	24%
Post-visit activities	32%	38%
Museum visit on own time	53%	70%

On the post-survey only, teachers were also asked how many times they accessed several types of resources associated with P2H since the beginning of the year. Figure 13 illustrates the percentage of respondents who accessed each type of resource to enhance their knowledge and/or classroom instruction. As illustrated, the most accessed resource was activities from the Journal, with 97% of respondents accessing them at least one time (and 77% accessing them two or more times). The most underutilized resource were the online guides, with 38% of respondents indicating they never accessed this particular resource.

Figure 13: Teacher Access of Passport to Health Resources



Additionally, interview respondents were asked whether they utilized the above P2H resources this year. Of the resources listed above, interview respondents were most likely to utilize the Journal, followed by the online newsletter. Only one respondent mentioned utilizing the curriculum guides and three respondents participated in the Online Course. Thirty-three percent of interview respondents (*n* = 4) said they did not utilize any of the P2H or Museum resources.

Interview participants were also asked how effective Museum resources were. Overall, respondents had very positive feedback on the resources, in fact one respondent, speaking about the curriculum guides said: *"I found them to be very effective, even better than our science curriculum*." Regarding the Online Course, interview respondents provided very positive reviews. One respondent said: *"The online course was very doable. The workload was just right and the amount of contact she [the instructor] gave us outside of the class was very helpful."*

Finally, teacher interview respondents were asked what the Museum could do to increase participation in or use of available resources and support. Responses were quite varied, but the following trends emerged:

- **Journal.** Two respondents said they felt the Journal could be condensed to include fewer pages to make it feel more accessible. An additional participant said that the Museum could consider tagging non-health science activities in the Journal, to ease integration into reading and math lessons.
- **Training.** Another two respondents commented that additional exposure to Museum resources, and especially those directly related to P2H, could increase participation. They both suggested doing this during the July Teacher Workshop.
- **Communication.** While one respondent said the *e-newsletter* was easy to ignore, especially as the year went along, another respondent said that including additional lesson plans/activity ideas in emails from the Museum would increase engagement.

- **Curricular alignment.** While several respondents said P2H was well aligned with district curricula, two disagreed and mentioned that linking P2H resources more closely to Core Standards and district curricula would increase their use.

e-newsletter

Teachers responding to the post-survey were asked to respond to a series of open-ended questions in order to learn more in-depth thoughts about specific topics. First, teachers were asked what information they would like to see in the e-newsletter. Of all open-ended questions in the post-survey, this received the fewest responses and only 11 people provide feedback. Even with the small number of responses, the following themes emerged:

- **Information to share with students and families.** Of the 11 respondents, 27% (*n* = 3) indicated they would like information to share with their students and families including quick facts that are geared toward students, opportunities for families to engage in physical activity, and general information and new ideas.
- **No changes.** Three respondents (27%) indicated that they liked the newsletter as it was, and would keep it as-is.

In addition to the above themes, other responses included wanting to see more information about museum exhibits, and more information on portion control and sugar. Two individuals also said they had not used the newsletter enough to comment on what ought to be included.

Passport to Health Teacher Workshop

Finally, teacher interview participants were asked if they had attended the Teacher Workshop the previous summer, and if so, how well prepared they felt heading into Year 2, and what could the Museum do differently to better prepare teachers.

Eighty-three percent of interview respondents (*n* = 10) did attend the Teacher Workshop. Only two respondents (17%) did not attend the Workshop and both were second year P2H teachers who attended the 2009 Teacher Workshop.

Interview participants were asked how well prepared they felt for Year 2 of programming. Fifty percent of respondents (*n* = 6) said that because this was their second year of implementation, they felt quite prepared and all said that Year 2 was much simpler, because they had been through the program once before and knew what to expect. Three respondents (25%) said they felt somewhat, or moderately prepared. For two of those respondents, this was their first year of implementation and they felt they were still figuring out the program. For the third somewhat prepared respondent, although the respondent was a second year P2H teacher, missing the Teacher Workshop, and beginning the 2010–2011 school year as a first grade teacher, made the program year somewhat challenging.

In the interview on the post-survey, teachers were asked what information or topics they would like to see covered in the July Teacher Workshop. Again, responses were somewhat varied, but the following trends emerged:

- **Increase time spent on Journal and program activities.** Forty-two percent of interview respondents (*n* = 5) and 18% of post-survey respondents (*n* = 4) suggested that spending more time working through the Journal and other activities teachers could do in their classrooms would have been beneficial. One post-survey respondent indicated that doing these things at the workshop could cut back on teacher planning time. This theme was also present in Year 1, although it was less prevalent. In a similar

vein, 25% of interview respondents (*n* = 3) said too much time was spent in *Expedition Health.*

- **Integration into fifth-grade curriculum or classroom.** Similarly, of the 22 post-survey respondents who provided feedback on this question, 36% (*n* = 8) indicated they would like to receive information on how to incorporate P2H into their classroom. Of these, three indicated that they would like to learn how to integrate the Journal activities into the classroom. This theme was also the most prevalent when teachers were asked about changes to the workshop in Year 1.
- **No changes.** Four post-survey respondents, representing 18% of respondents, indicated that they liked the workshop as it was and would not make any changes.
- **Lessons learned.** Seventeen percent of interview participants (*n* = 2) said they would like to hear from experienced P2H teachers. One suggested convening a panel of teachers who were entering Year 3 of implementation to share lessons learned and words of wisdom with new teachers.
- **Specific content.** Three post-survey respondents (14%) expressed an interest in gaining more content specific knowledge including information on: nutrition and child obesity, including how to teach it to children, and portion control and sugar and high fructose corn syrup issues.
- **Resources.** One interview participant said increasing training on Museum resources would have helped and another said that having resource kits available for teachers to check out and use in conjunction with P2H would help with classroom integration.
- **Other responses.** One post-survey respondent wanted support on how to combat parental and student apathy, and one indicated they would like more hands-on activities at the workshop.

Additional thoughts from teachers

The post-survey and interview script asked teachers a few overarching questions about P2H to learn their perceptions about barriers to implementing P2H in the classroom and how the Museum could improve the program overall.

What is working well with Passport to Health

In both the post-survey and teacher interviews, respondents were asked what their favorite part of the program was, or what the Museum should not change. Responses varied but can be grouped into the following themes:

- **Everything.** Twenty nine percent of post-survey respondents (*n* = 7) indicated that they loved everything about the program and would not change it at all. One respondent said: *"This program should not change. Everything was phenomenal. It was an excellent experience for the kids and if I end up teaching 5th grade again I would love to do this with them. Thank you for everything you do."*
- **Memberships.** Of the 24 post-survey respondents who answered this question, 29% (*n* = 7) said the family membership was the most valuable component, particularly because it gave low-income families an opportunity that they might not have otherwise had. Two interview respondents also listed the membership program as their favorite component. Teachers from Year 1 also expressed this was one of their favorite parts of the program.

- **Family involvement.** Twenty-five percent of interview respondents (*n* = 3) said that family engagement and watching the families be so involved in their child's education was the best thing about P2H.
- **Visits to the Museum.** Seventeen percent (*n* = 4) of post-survey respondents and 50% of interview respondents (*n* = 6) identified the student field trips or family days at the Museum as the best part of the program. This theme was present in Year 1 as well.
- **Resources.** Eight percent (*n* = 2) of post-survey respondents indicated that the best part of the program was the resources the students received. One interview respondent said the resources available to teachers were among the best parts.
- **Classes for students.** Eight percent (*n* = 2) of post-survey respondents indicated that classes taught to the students were the best part of the program.

Barriers to integrating Passport to Health into the classroom

Interview and post-survey respondents were also asked to identify barriers to integrating P2H into their classrooms. Twenty-eight teachers responded in post-surveys and of all open-ended questions asked, this had the least amount of variety in response, and included the following themes:

- **Time constraints.** Eighty eight percent[16] (*n* = 21) of post-survey respondents and 50% of interview respondents (*n* = 6) indicated that time constraints were the biggest barrier to integration. Teachers in Year 1 of the program also listed this as a major barrier.
- **District requirements.** Very similar to time constraints, and likely the cause of time constraints, 55% (*n* = 12) of post-survey respondents and 42% of interview respondents (*n* = 5) said district requirements, such as curricula and pressure to teach to the CSAP test, limited their ability to incorporate P2H programming. Two interview respondents specifically mentioned district pacing guides and the constraints they place on teachers.

Other responses to this question include not having easy access to lessons and not being able to find the ones they needed, and lack of parents' support.

Engagement of families in Passport to Health

In the interviews, teachers were asked several questions about the level of engagement of families in P2H activities. While responses were quite varied, teachers reported that families were more engaged with programming in Year 2 than in Year 1. In fact, 42% of respondents said that participation among families was good, compared with only 15% who said, in Year 1, that P2H experienced higher participation than other programs. Similarly, while 46% of teachers in Year 1 reported no level of engagement, only 25% in Year 2 said that engagement was not very high.

Interview respondents were also asked about barriers to reaching parents. The following themes emerged in Year 2:

- **Language.** Forty-two percent of interview respondents (*n* = 5) mentioned that language is often one of the greatest barriers to overcome with the families of their students. Respondents said the Museum did a good job of providing materials in English and Spanish, and this should continue.

[16] Note that because teachers were encouraged to provide multiple responses, the percentages do not add up to 100%.

- **Busy families.** In addition, 25% of respondents (*n* = 3) said students' families are busy, are often juggling multiple jobs and other things, and that it's challenging for them to engage because of time constraints..
- **Communication.** Similar to language barriers, 25% of respondents (*n* = 3) said that schools and the Museum need to be willing to utilize multiple modes of communication to effectively reach the families. Without sufficient information, families lack the knowledge and information to actively engage.

In addition, interview respondents were asked what the Museum could do to best reach out to families and to increase engagement in P2H. Like in Year 1, interview respondents said that the Museum did a good job overall of reaching out to parents. Many respondents said that because this was Year 2 of implementation, they were better able to encourage participation, as they knew the program better this year. There were, however, some suggestions for how the Museum could improve outreach efforts and increase family engagement:

- **Direct communication.** Considering the barriers listed, it is not surprising that 42% of respondents (*n* = 5) said that communicating directly with families would be a good way to increase engagement. This was also the prevailing response in Year 1. Further, it should be noted that in Year 1, interview respondents suggested coupling Family Fit Fests and other P2H events with events currently scheduled and held at schools. In Year 2, this was strongly encouraged and 58% of respondents (*n* = 7) complied, resulting in dramatic increases in family participation at all but one school, where the event occurred on a night with heavy snowfall. Twenty-five percent of respondents (*n* = 3) mentioned that their schools use automated phone systems to reach out to parents regarding special events or important reminders. This is, perhaps, a system that could be considered for use by P2H schools.
- **Incentives.** Thirty-three percent of respondents (*n* = 4) said that providing incentives to their students was an effective way to increase response rates for program materials. One respondent said that he/she made all program materials assignments for his/her students, which increased participation in most events, including those for families.
- **Language.** Another 25% of respondents (*n* = 3) said that continuing to provide all materials in English and Spanish was beneficial for outreach and engagement. One respondent, however, noted that some of the families speak other languages, and it is important to know how to effectively reach out to those families, as well.

Engagement of schools in Passport to Health

Interview respondents were asked to discuss how the principal/school leadership supported P2H, if scheduling of P2H events was effective for their schools, and what they would do differently next year. Seventy-five percent of respondents (*n* = 9) said their principal/school leadership was supportive of P2H, but didn't do much to help with programming. Only one respondent said he/she received specific support, in the form of scheduling help, from a member of school leadership. In addition, only 17% of respondents (*n* = 2) said their principal/school leadership did not show active support of the program.

Overall, 75% of respondents (*n* = 9) said the timeline worked well for their school, with one respondent mentioning it was much better this year than in Year 1. Of those who said they might make changes, 17% (*n* = 2) said they would spread the program out more, 17% (*n* = 2) said they would schedule programming at the beginning of the school year to avoid CSAP testing, one respondent suggested having Family Fit Fest at the beginning of programming to

introduce families to P2H and one suggested having two Family Health Days for each school, one at the beginning of the year and one nearer to the end.

How the Museum can improve Passport to Health

To facilitate the Museum's efforts to further improve the program, teachers were asked in the interviews and post-surveys what the Museum could do to improve P2H. Forty percent (*n* = 6) of the post-survey respondents and 50% of interview respondents (*n* = 6) who provided feedback about this question indicated that they loved the program as it was and wouldn't change anything. Additional responses for this question were incredibly varied but can be grouped in the following ways:

- **Feedback on existing components.** Forty percent of post-survey respondents (*n* = 6) and 42% of interview respondents (*n* = 5) provided feedback about existing program components. Responses included: eliminating the Family Health Day, making aspects of the Museum trip more interactive, having more resources at Family Health Day from the community, giving membership sign-ups to the school to distribute to parents, giving P2H students uninterrupted time in *Expedition Health,* upgrading Family Fit Fest activities to be more engaging, using more relevant foods in the food balancing activity, and decreasing the use of the Journal.
- **Additional components.** In addition to providing suggestions on current programmatic components, 20% of post-survey respondents (*n* = 3) identified new components to add to the program curriculum. Recommendations included: adding an additional class visit, creating a better way to track nutrition and physical activity such as a poster, and placing a bigger emphasis on obesity and diabetes.
- **Alignment.** As has continued to be a theme in the findings, 17% of interview respondents (*n* = 2) said closer alignment to Colorado standards would help with implementation.

One post-survey respondent also indicated that receiving fewer emails would improve the program.

How the evaluators can improve communication and outreach

Interview respondents were asked what evaluators could do to better reach out to and communicate with teachers and school staff next year. Sixty-seven percent of interview respondents who answered the question (*n* = 8) said they didn't know, or that there was nothing the evaluation team could do to improve communication or outreach. The remaining interview respondents provided the following suggestions: attempt to find the appropriate connector at each school, introduce the survey more to students so the connection to P2H is clear, provide P2H teachers with instructions to conduct the pre- and post-surveys without evaluators, and make sure to get paperwork to schools with plenty of time to get signatures from parents and return the paperwork.

Advice for new P2H teachers

This year, interview participants were asked what piece of advice they would give to new, incoming P2H teachers. Responses were quite varied, but the following themes emerged:

- **Scheduling.** One respondent suggested associating P2H activities with other school activities, something that proved quite beneficial this year. Additionally, while one respondent suggested scheduling events close together to simplify the connection

between components, another suggested spreading them out throughout the year, to allow for more continuous learning opportunities.

- **Program materials/tools.** Two respondents encouraged new teachers to get to know and to utilize the Journal as an important learning tool. Another suggested spending time becoming familiar with the teacher book. Finally, one suggested looking through all materials and determining what few things to focus on, saying that it was nearly impossible to do all P2H activities over the course of the year.
- **Communication and leadership.** One respondent said it was important to share the responsibilities among the teaching team. Another suggested making the P2H lead a non-core teacher, suggesting that person might have more time for the scheduling and logistics of the program. One participant suggested that inviting the principal to the July Teacher Workshop could be a good way to increase school support for P2H. Finally, another reinforced how important it was for P2H teachers to support each other and keep communication open. This respondent suggested the creation of a P2H email support system, where teachers could reach out to each other for support or program ideas.
- **Attitude.** Similarly, two respondents discussed how important it was to show your excitement for the program to your students. Both said that when teachers are excited and talk up a program, students are more likely to be committed to and excited about the program, too.

Conclusion

The teacher pre- and post-surveys and interviews provide insight into the knowledge, attitudes and perceptions of teachers. The surveys will also help the Museum understand how it is meeting its teacher outcomes and areas where it can have continued growth.

Did the program increase health science content instruction and knowledge?

There are a number of indicators that help the Museum answer this question.

- Teachers' knowledge of health science significantly increased from pre- to post-measurement. Using a score composed of eight different teacher health knowledge survey items, teachers' mean scores improved from 3.91 on the pre-survey to 4.09 on the post survey. Although this mean difference may seem negligible, a review of individual items reveals a post measure increase on six of the eight items (when reviewing percentage of teachers who chose Agree or Strongly agree).
- The significant gains reported above were accompanied by increases in the incorporation of physical activity and nutrition into science lessons. There were also gains in the degree to which teachers incorporated health science into non-science curriculum. Although not directly related to teacher knowledge, the incorporation of these factors may indicate an increased comfort with health science material, and certainly demonstrates an increase in science content instruction.
- Although the formal measure of teachers' comfort with teaching health science didn't significantly improve, combined percentages of those who Agreed or Strongly Agree with the teaching comfort survey items showed improvement over pre-survey measurement.

- Based on post-survey results, 61% of teachers Agreed or Strongly Agreed they were more comfortable teaching health science content this year than in previous years as a result of P2H, and interview respondents noted that P2H gave them new, creative tools to use implement health science and that P2H reinforced their focus on health science.
- As was seen in Year 1, the majority of teachers on the post-survey indicated that students who participated in P2H this year were able to better identify and understand the purpose of the body systems, the connection between different body systems, the connection between the body systems and physical activity, and the connection between the body systems and healthy eating than similar groups of students they have taught these concepts to. Additionally, 50% of interview respondents said the hands-on nature of P2H made learning science more fun and engaging for their students.
- Of the interview respondents, 42% thought students had increased their physical activity as a result of P2H, which is less than in Year 1, but still an impressive improvement.

Areas for growth or improvement

- While there were items that indicated overall growth in knowledge, comfort and quantity of health science teaching, certain gains were less robust when tied to a P2H item qualifier (e.g., because of P2H…). For the item that read: *as a result of P2H, I integrated health science content into other lessons such as reading and math*, teachers were less certain about P2H's impact. In the post-survey, 61% percent of teachers chose either Uncertain or Disagree for this statement. Although those who disagreed with this statement may be difficult to change, the 29% of teachers who stated they were uncertain may be more open to the positive impacts of P2H. In addition, contextualizing this question by providing some examples of what integration looks like, may be enough to help teachers realize they are, in fact, being positively impacted by P2H.

Did the program increase recognition of the value of physical activity, healthy foods and healthy lifestyles?

The following results help answer this question:

- The results of the post-survey indicate that as a result of P2H, 79% of respondents Agreed or Strongly Agreed they were more likely to encourage students to participate in physical activity at school, and 76% Agreed or Strongly Agreed they were more likely to encourage physical activity outside of school. These numbers represent large gains when compared to Year 1 data, where 62% and 56% of teachers encouraged physical activities at school and away from school, respectively.
- Upon quantifying certain survey items, significant gains were realized for general measures of how often teacher actually encourage physical activity. Post survey scores indicate that teachers increased the frequency in which they encourage physical activity at school.
- There was also a significant gain in teachers' pre-post knowledge of physical activities and resources available to students outside of school. Not only did mean ratings of the extent of teacher's knowledge improve throughout the year, *where* this mean shift occurred should be noted. Pre-survey ratings fell on the lower half of the scale (score below 3, toward ratings of Non-existent), where post-survey ratings fell on the upper-half of the scale (score above 3 toward ratings of Extensive).

Areas for growth or improvement

- Although teachers were more likely to encourage physical activities outside of class because of P2H, the frequency in which they actually did encourage physical activity did not significantly improve from pre- to post-measurement. In addition, comparisons of frequencies (see Figure 11), do not offer a clear positive trend. Program personnel should work with teachers to discover why the encouragement of physical activities outside of school is not occurring more often.

Did the program increase teachers' use of Museum resources?

The following information helps address this question:

- Six out of eight resources saw increased use throughout the year, with professional development and free previews decreasing. Almost all categories had higher rates of use when compared to post-survey use indicated in the Year 2 Teacher Report.
- A high percentage of teacher respondents on the pre- and post-surveys had visited the Museum with their classes as well as on their own time.
- Based on the post-survey, 97% of respondents had accessed activities from the Journal at least one time (90% in Year 1), with 77% indicating they had accessed them two or more times (70% in Year 1).

Areas for growth or improvement

- The use of other resources is most likely leading to a degree of saturation in which teachers feel they are getting enough P2H material elsewhere and don't have to use all resources at their disposal. Now that the Museum has two years worth of data, perhaps program personnel can discover new ways to increase use of under-utilized resources, or replace these resources with other items teacher may call on more frequently.
- Per the suggestions provided by teachers in the interviews, the Museum could continue to seek creative and varied methods of communicating directly with the families. Whether through family liaisons or the use of automated calling systems or similar communication devices, teachers felt that increasing outreach to families could increase engagement and participation.

Additional input from teachers

- Teachers who responded to the post-survey or who participated in interviews had positive perceptions of the program overall. Among the components listed as teacher favorites were the membership program, family involvement, visits to the Museum, access to resources for both students and teachers, and *Fitness Physiology* and *ExerScience.*

DENVER MUSEUM OF NATURE & SCIENCE

Appendix III: Passport to Health Year 3 Journal Report

Summary of Journal Observations and Journal User Survey

Submitted July 22, 2011 By:

JVA CONSULTING, LLC
partners in community and social change

Introduction

In spring 2009, the Denver Museum of Nature & Science (the Museum) opened a new health science exhibit, *Expedition Health*, which stems from the Museum's new Health Science Initiative and replaces the *Hall of Life* exhibit that was an integral part of the Museum for many years. To add a key education component to complement this exhibit, the Colorado Health Foundation (the Foundation) provided a generous grant to fund the development and implementation of the Passport to Health program (P2H). P2H was originally a three-year program with one year for design and two years for implementation. However, a no-cost extension is allowing for three years of implementation. The Museum designed the program to help improve health outcomes for fifth-grade students as well as their families and teachers at 30 low-income schools in the Denver metro area. The Museum contracted with JVA Consulting, LLC (JVA) to conduct a comprehensive evaluation of P2H, including two key components: a process evaluation to examine the program design and implementation, and an outcomes evaluation to measure the program's abilities to meet its overall objectives. JVA is utilizing multiple methods to collect both quantitative and qualitative data that will provide the Museum, the Foundation and other stakeholders with important insight into the progress of the program and its outcomes. The evaluation and its ongoing findings will enable the Museum to make informed decisions in program refinement and track ongoing program accomplishments. This report helps inform the outcomes evaluation by providing insight into the effectiveness and utility of the P2H student Journal.

The Passport to Health student Journal was designed to support P2H classroom activities, Museum activities and to enhance overall health science content instruction and knowledge among participating teachers and students. This report provides an assessment of the use and effectiveness of the Journal and aims to answer the following question related to teacher and student outcomes:

- *Did the program increase health science content instruction and knowledge?*

Methodology

To better understand and evaluate the use and effectiveness of the P2H student Journal and to determine whether or not it increased health science content instruction and knowledge, JVA utilized two evaluative tools: an observation form and a Journal user survey administered with P2H teachers. The Journal observation form was designed to allow JVA associates to evaluate the number of activities used in student Journals and the degree to which each activity was completed. Journal observations were conducted in the spring of 2011 at the same time that student and teacher post-surveys were administered. While JVA intended to administer the Journal observation form in all classrooms in all P2H schools, many teachers had already encouraged their students to take their Journals home, resulting in Journal observations taking place in only nine schools (31%). A total of 37 observations were conducted.

JVA associates received training on the implementation of the Journal observation form. In order to decrease discrepancies, JVA conducted an inter-rater reliability test to measure the accuracy of the tool. At the time of testing, the three JVA associates involved with the test returned very similar and accurate responses. On questions that JVA associates responded to differently, modifications were made to the tool to increase accuracy.

The second tool, the Journal user survey, was administered with teachers along with the teacher and student post-surveys at the end of the program year. This survey allowed teachers

to indicate which activities they used with their students and encouraged teachers to provide the Museum with general feedback about the Journal and its effectiveness. Rather than ask questions about all 25 of the Journal activities, the Journal user survey asked only about activities that were not facilitated by Museum staff or educators. In total, there were 14 activities listed on the user survey, and a copy of the Journal was available to teachers who wanted or needed to cross-reference. While Journal user surveys were provided to all P2H teachers, 41 completed the survey for a response rate of 39%.

Study limitations

JVA hoped that the use of two evaluative tools would produce more holistic and complete information regarding the Journal and its effectiveness. However, because teachers were not instructed or encouraged to keep student Journals in the classrooms, just under one-third of the P2H schools could be observed.

Analysis

Did the program increase health science content instruction and knowledge?

Student outcomes

The Journal observation form explored student use of the Journal and attempted to gauge understanding of questions and activities in order to determine if the Journal effectively increased health science content knowledge. Overall, the Journals were not used to their fullest extent, with the average student responding to only 32% of available activities. In total, the student Journal contained 25 activities, 11 pages of lined paper and 11 pages of graph paper. Table 1 (below) illustrates the findings from the Journal observation form and compares data from Year 1 (2009–2010) with that from Year 2 (2010–2011). As Table 1 illustrates, the Year 2 mean shows that eight activities were responded to, while the median is eight and the range is also eight. This range illustrates that one student responded to 11 activities, one responded to three activities and all other students fell somewhere in between.

Table 1 also reflects that while students responded to, on average, one-third of all available activities, they demonstrated a high level of understanding with the activities they did respond to. In addition, 42% of observed Journals indicate that students were not only completing the one-word responses, but were also performing some level of reflection in the Journals. This number is lower than in Year 1, indicating that students whose Journals were reviewed in Year 2 were less likely to perform reflection than those reviewed in Year 1. Finally, an average of 81% of all questions were completed for each activity, meaning that the activities students did respond to were 81% complete, with responses ranging from 20%–100% completed.

Table 1: Journal Observation

Journal Usage	Year 1 (*n* = 74)	Year 2 (*n* = 37)
Average number of activities responded to	7.3	8.0
Median number of activities responded to	8	8
Range	12	8
Students demonstrating complete understanding	68%	69%
Students demonstrating some level of understanding	32%	30%
Students demonstrating no level of understanding	0%	1%
Did the student perform reflection for this activity?		
YES	60%	42%
NO	40%	58%
Average % of questions completed for each activity	84%	81%

Despite somewhat low levels of participation, levels of student understanding were high. Based on this information, it seems likely that the Journal had a positive impact on student learning outcomes.

Teacher outcomes

The Journal contains activities and questions that relate to Fitness Physiology, ExerScience and Expedition Health, as well as activities and questions that do not correlate directly with P2H program components. The Museum hoped that by providing participating teachers with suggestions and activities to encourage them to use the Journal for non-P2H activities, the Journal would be another way to increase health science content instruction.

The Journal user survey returned results that support many of the findings of the Journal observation form. Table 2 illustrates the percentage of teachers who responded yes and no when asked if they had utilized each of the 14 activities not facilitated by a Museum Educator, had used the lined or graph paper, and whether or not the physical education teacher at their school encouraged the use of Journal activities or used activities in the classroom.

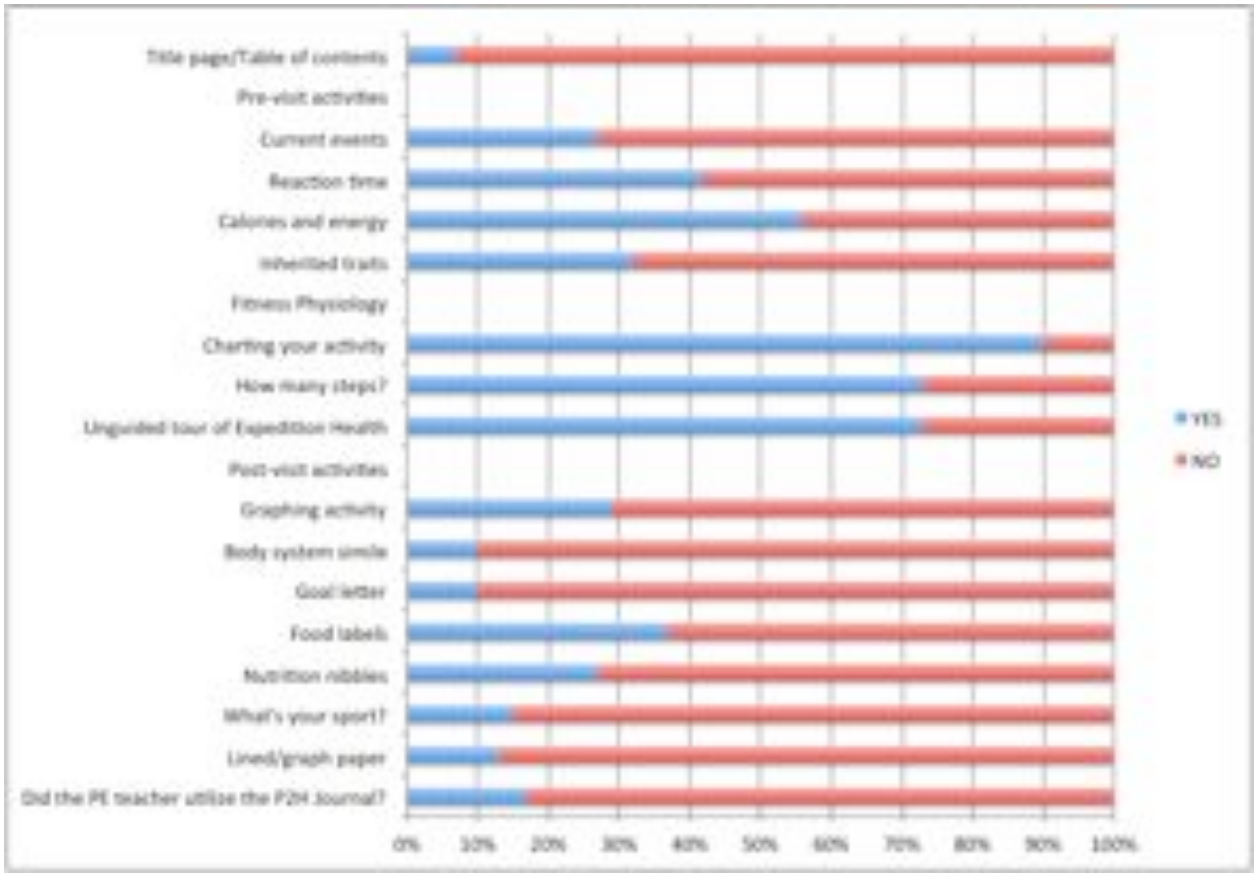
Table 2: Journal User Survey

Activity	Year 1 YES (*n* = 42)	Year 1 NO (*n* = 42)	Year 2 YES (*n* = 41)	Year 2 NO (*n* = 41)
Title page/table of contents	19%	81%	7%	93%
Pre-visit activities				
Current events	17%	83%	27%	73%
Reaction times	36%	64%	46%	64%
Calories and energy	40%	60%	56%	44%
Inherited traits	17%	83%	32%	68%
Fitness Physiology				
Charting your activity	79%	21%	90%	10%
How many steps?	83%	17%	73%	27%
Unguided tour of *Expedition Health*	71%	29%	73%	27%
Post-visit activities				

Activity	Year 1 YES (*n* = 42)	Year 1 NO (*n* = 42)	Year 2 YES (*n* = 41)	Year 2 NO (*n* = 41)
Graphing activity	26%	74%	29%	71%
Body system simile	12%	88%	10%	90%
Goal letter	10%	90%	10%	90%
Food labels	21%	79%	37%	63%
Nutrition nibbles	21%	79%	27%	73%
What's your sport?	19%	81%	15%	85%
Lined/graph paper	14%	86%	13%	87%
Did PE teacher utilize P2H Journal?	25%	75%	17%	83%

The following figure illustrates reported use of Journal activities in graphical form.

Figure 1: Journal User Survey Data



As Table 2 and Figure 1 illustrate, teachers were far more likely to utilize the activities associated with Fitness Physiology and the Unguided Tour of *Expedition Health* than they were to use any of the other pages of the student Journal. In fact, two of the activities associated with the pedometer challenge, as well as the unguided tour were the only activities used by 70% or more of P2H teachers. Only five teachers used the lined/graph paper at the end of the Journal and the post-visit activities accompanying the *Expedition Health* Online Guide were the least frequently used activities. Although the students demonstrated high levels of understanding and

participation in the Journal activities, low participation from the teachers may indicate that the Journal was not as effective for increasing health science content instruction as it was for increasing health science content knowledge. That said, Year 2 teachers did report using some components of the Journal more than in Year 1. As Table 2 illustrates, although use of pre-visit activities was still low, more teachers reporting using these activities in Year 2 than in Year 1. Further, significantly more teachers reported using the food labels activity in Year 2, as compared with Year 1.

Barriers to use

To determine why teachers did not fully implement or utilize the Journal, the user survey asked respondents to identify barriers to use. Much like in Year 1, the most common response, provided by 44% of respondents (*n* = 18), was that lack of time was the greatest barrier. Secondly, 12% of respondents (*n* = 5) stated that they were unaware of the P2H curriculum and had difficulties incorporating more or unknown materials. Thirdly, 7% of respondents (*n* = 3) responded that their science plan for the year did not match the P2H curriculum and had trouble finding time to fit in extra materials. Finally, another 7% of respondents (*n* = 3) mentioned they did not teach science and had no control or knowledge of the Journals.

In Year 1, one teacher responded that the lack of page numbers in the Journal made it challenging to use in the classroom; in Year 2 the Museum added page numbers to the Journal, hoping that it would increase use. According the Journal use survey data and the Journal observations, use has not increased dramatically, but the addition of page numbers was a reported improvement for both Museum educators and P2H teachers.

Physical education integration

Because the Journal was not exclusively correlated with P2H activities, participating teachers were encouraged to include non-science teachers in the use of the Journal. On the user survey, P2H teachers were asked if the physical education (PE) teacher at their school had used the student Journal in his/her instruction. Eighty-three percent of respondents (*n* = 30) said the PE teacher did not use the Journal, while 17% (*n* = 6) said he/she did. Five teachers did not respond and one teacher mentioned that he/she did not know the PE teacher should be or could be involved with P2H programming. One teacher responded that the PE teacher did cover topics in the journal in a more broad sense. According to the Journal user survey, fewer PE teachers integrated the P2H Journal in Year 2, as compared with Year 1 (17% and 25%, respectively). Increasing integration of the Journal into PE programming could be an important way of increasing health science content instruction in participating schools.

Math and literacy integration

In addition to integrating P2H curriculum into PE classes, the Museum hoped that the Journal would help facilitate the integration of health science into other subjects, such as math and literacy. To assist with this, the Journal contains numerous activities that can be used in math or literacy classes to help integrate P2H and health science topics into other subjects. According to reported use of specific Journal activities, teachers were least likely to utilize literacy-focused P2H activities and were only slightly more likely to utilize the math-focused activities. Instead, the activities most likely to be used by teachers were those directly relating to P2H and health science. For example, only 10% of teachers reported using the *Goal Letter* activity, compared with 73% who used the activity from the pedometer challenge called *How Many Steps?* According to Journal user survey data, the Journal was not the most effective tool for increasing health science content integration into non-science coursework.

Conclusion

The Journal observations and Journal user surveys provided insight into the use and effectiveness of the P2H student Journal and helped illustrate how the Journal helped the Museum achieve its teacher and student outcomes. Based on the results and analysis of Journal observations and Journal user surveys, the student Journal effectively increased health science content knowledge among students, but was less effective at increasing health science content instruction among teachers.

Did the program increase health science content instruction and knowledge?

The following indicators help to illustrate the response to this question:

Students

- According to Journal observations, students responded to an average of 32% of the activities in the Journal, most of which were completed with a Museum educator or while at the Museum. Journal observations also indicate that 69% of students demonstrated complete understanding of Journal activities, 30% demonstrated some level of understanding and 1% demonstrated no level of understanding.
- While students often did not complete activities in their entirety, on average, students completed 81% of all questions for each activity in the Journal. Overall, students performed reflection 42% of the time.

Areas for growth or improvement

- Although students completed, with high levels of understanding, one-third of all Journal activities, the Museum could continue to consider ways to encourage increased use of the tool. While teachers indicated that the Journal was a useful and effective teaching tool, they struggled to integrate the tool into their classroom.

Teachers

- According to the Journal user survey, 17% of PE teachers utilized P2H Journal activities in their classes, while 83% did not. One P2H teacher said she didn't know that the PE teacher should or could be included in P2H programming.
- Similar to Year 1 results, feedback from both evaluative tools illustrated that teachers were more likely to use science and health science Journal activities, and were less likely to use math or literacy Journal activities.
- Much like in Year 1, the greatest reported barrier to implementation of the Journal was a lack of time. In Year 2, 44% of respondents felt they did not have time to completely or extensively implement the student Journal.

Areas for growth or improvement

- While students completed one-third of all Journal activities, the majority were completed with Museum educators or in conjunction with a Museum visit, rather than as additional health science curriculum in school. The Museum could consider increasing training on the uses and effectiveness of the student Journal to increase teacher awareness of activities. This additional training could be added to the Teacher Workshop that takes place each summer.

- In addition to increasing the overall training that teachers receive, the Museum could consider creating a document that would help PE teachers incorporate P2H Journal activities into their PE class activities. Because PE teachers are less likely to attend the summer Teacher Workshop, creating a short training document could help increase PE integration.
- Because time was cited as the greatest barrier to Journal use and many teachers said they did not have the opportunity to fully understand the uses of and the activities in the Journal, the Museum could consider creating an *Instructor's Guide* for the student Journal. This *Instructor's Guide* could more clearly label math and literacy activities and provide teachers with more guidance or information regarding the use and implementation of the activities. Similarly, the Museum could add a section designed for PE teachers that would clearly illustrate which activities are most appropriate for PE class implementation.

DENVER MUSEUM OF NATURE & SCIENCE

Appendix IV: Passport to Health Year 2 Family Report

Summary of Parent Post-Surveys, Family Health Day Interviews and Focus Families Interviews

Submitted July 22, 2011 By:

JVA CONSULTING, LLC
partners in community and social change

Introduction

In spring 2009, the Denver Museum of Nature & Science (the Museum) opened a new health science exhibit, *Expedition Health*, which stems from the Museum's new Health Science Initiative and replaces the *Hall of Life* exhibit that was an integral part of the Museum for many years. To add a key education component to complement this exhibit, the Colorado Health Foundation (the Foundation) provided a generous grant to fund the development and implementation of the Passport to Health program (P2H). P2H was originally a three-year program with one year for design and two years for implementation. However, a no-cost extension is allowing for three years of implementation. The Museum designed the program to help improve health outcomes for fifth-grade students as well as their families and teachers at 30 low-income schools in the Denver metro area. The Museum contracted with JVA Consulting, LLC (JVA) to conduct a comprehensive evaluation of P2H, including two key components: a process evaluation to examine the program design and implementation, and an outcomes evaluation to measure the program's abilities to meet its overall objectives. JVA is utilizing multiple methods to collect both quantitative and qualitative data that will provide the Museum, the Foundation and other stakeholders with important insight into the progress of the program and its outcomes. The evaluation and its ongoing findings will enable the Museum to make informed decisions in program refinement and track ongoing program accomplishments. This report helps inform the outcomes evaluation by providing insight into the effects of the program on families.

In addition to having a direct impact on students and teachers, the Museum hopes that Passport to Health will have a direct impact on families as well. Through parent participation in the Family Fit Fest, Family Health Day and the membership component, and through parent-child conversations, the Museum hopes that Passport to Health positively impacts families. The Museum hopes that parents and families will achieve the following outcomes:

1. Show better understanding of the importance of a healthy lifestyle for the whole family
2. Report making changes that support the whole family eating better and moving more

In order to gauge the achievement of these outcomes, this report aims to answer the following two questions, relating to parents/families:

- *Did the program increase recognition of the value of physical activity, healthy foods and healthy lifestyles?*
- *Did the program encourage students to advocate for healthy changes at home and help families make those changes?*

Methodology

In order to answer these questions, JVA utilized three evaluation methods. First, JVA associates attended four Family Health Days at the Museum and conducted 132 interviews with parents and families of P2H participants. The interview asked respondents to reflect on changes they witnessed in their children or families as a result of P2H. Questions focused on changes in physical activity, nutrition and food and whether or not their child was bringing information about P2H home with them to share with their families. Three schools were not able to participate in Family Health Days because of scheduling problems. Families from 96% of participating schools (n = 25) participated in interviews, which were conducted in English and Spanish.

Harrington Elementary only had three participants at Family Health Day and unfortunately, none of them participated in interviews, making it the only school that participated in Family Health Day, but not in interviews.

Second, post-surveys were sent home to the families of P2H participants in the spring of 2011, and 282 surveys were returned. The survey asked questions similar to those asked in the interview and also included questions about whether or not families visited the Museum, local parks and/or recreation centers during the year. Surveys were conducted in English and Spanish, and responses were collected from 48% of schools (*n* = 14).

Third, JVA engaged families in the Focus Families component, which was designed to track and monitor behavioral changes that occurred within families as a result of their and their child's participation in P2H. The Focus Families component took place outside of the school setting and was intended to understand what, if any, changes were occurring in the home. Focus Families were asked to self-monitor health-related lifestyle changes and report on any changes, including food choices, food purchases, levels of physical activity and other healthy lifestyle changes. The Focus Families component included a pre-screening of interested families to help gauge their willingness to commit to one-year of participation, and monthly follow-up interviews with the family to assess any changes and to discuss the P2H program. In an effort to increase participation and engagement, JVA simplified the Focus Families tools for Year 2. Rather than asking the families to engage in extensive home monitoring through individual family journals and home activity logs, families were only required to participate in monthly phone interviews with a JVA associate.

The Museum hoped that JVA would recruit six families for the 2010–2011 school year. Despite extensive and aggressive recruitment attempts and amended tools to simplify the process, JVA only successfully recruited one family willing to participate in this component. Just like in Year 1, JVA worked with family liaisons and directly with teachers to identify potential families. The only difference with recruitment in Year 2 was that JVA was less explicit about seeking "hard-to-reach" families and was more explicitly seeking families that would remain engaged for the full year. After recruitment and retention struggles in Year 1, JVA hoped that this new strategy would help recruit more families who would remain active throughout the entire year. Unfortunately, this new strategy also proved ineffective.

While the Year 1 Outcome Evaluation Report included the Focus Families component as a separate appendix, because participation was significantly lower in Year 2, results from the one Focus Families participant are included in this appendix.

Study Limitations

The use of three evaluation tools did increase the number of responses solicited, however, there are limitations to these methods. First, it is important to note that just like in Year 1, family engagement was a challenge throughout the implementation year, and the evaluation activities proved especially difficult in terms of family engagement. In order to increase participation in Family Health Day interviews, the Museum and JVA continued to use the stamp incentive system, which was implemented during Family Health Days in Year 1. Just like in Year 1, Family Health Day participants were required to obtain a certain number of stamps on their passport before they could enter their child in a raffle to win a bicycle. Participating in the JVA interview earned families one of the stamps. Interestingly, JVA conducted significantly more Family Health Day interviews in Year 2 than in Year 1. It could be due to continued use of the incentive system, or to the fact that JVA stayed near the school entrance/exit for interviews this year, rather than changing locations and moving throughout the Museum, as was done in Year 1. Finally, because three schools were unable to attend the Family Health Days, their opinions

are not represented in the interviews. Further, of the three schools not in attendance, only Park Hill families returned the post-surveys, and as such, the opinions of families from Cole Arts and Science Academy and Northeast Academy Charter are not represented in this report.

In addition to these overall limitations, there were limitations particular to the Focus Families component, which are important to note. Similar to the experience in Year 1, identifying school personnel to help with the recruitment of families was, perhaps, the greatest limitation. While some teachers and family liaisons were helpful in the recruitment process, many were nonresponsive or unable to help identify potential families. Further, once families were identified, establishing and maintaining communication also proved to be challenging. While the Focus Families component in Year 2 yielded very minimal data, the one family that participated consistently provided a valuable case study, demonstrating the ability of P2H to affect the whole family, much like in Year 1.

Finally, it should be noted that while the responses and analysis included in this report accurately reflect the views of respondents, participation in surveys, interviews and Focus Families was completed voluntary. As a result, it is possible that those who chose to respond did so because they are characteristically more engaged with school and out-of-school programming. Thus, while both positive and constructive comments emerged in the surveys, interviews and Focus Families interviews, it is possible that results skewed slightly positively.

Analysis

Did the program increase recognition of the value of physical activity, healthy foods and healthy lifestyles?

Through participation in all program components, the Museum sought to increase understanding of the importance of physical activity, healthy foods and healthy lifestyles among families. Because this is the crux of the program, the parent post-survey, Family Health Day interviews and Focus Families interviews emphasized this theme. Parents were asked a series of questions about changes they have implemented at home as a result of Passport to Health.

> *"Instead of going for cookies, he reaches for Goldfish crackers more now. He has been drinking more milk and juice and less Dr. Pepper. In the past, this was something we had to enforce ourselves, but now he seems less attracted to sugar-heavy drinks."*
>
> *–Focus Families participant*

Impact on physical activity

According to post-surveys, 58% of respondents Agree and 22% Strongly Agree with the statement: *Because of Passport to Health our family has increased the amount of physical activity we do.* In addition, the Family Health Day interview asked parents if they felt their children were more active as a result of P2H, and 77% of interviewees (*n* = 86) said yes, while 14% (*n* = 16) said no. Much like Year 1, many of the parents/guardians who said their child was not more active said that their child was very active before participation in P2H. These percentages are slightly better than results from Year 1, when 73% of interview respondents said their children were more active and 24% said they were not. Family Health Day interviewees were also asked if their families were more active as a result of P2H, and 79% of respondents (*n* = 81) said yes. Of the families that reported being more active, 17% (*n* = 14) said they were walking more, 12% (*n* = 10) said they were going to the park more and 9% (*n* = 7) reported doing more activities like riding bikes, or playing soccer and basketball. Similarly, in

Year 1, walking and visiting parks and recreation centers were the most common ways families were increasing their physical activity.

Impact on healthy foods

In the Family Health Day interviews, families were asked if they felt that P2H had affected the way their child or family approached nutrition or food. While 27% of respondents (*n* = 30) said they were not making changes, 70% (*n* = 78) said they were making changes. Of those who are making changes, several families mentioned specific changes they are making. Twenty-two percent (*n* = 17) of respondents said their families introduced more fruits and vegetables into their diet. Additionally, 13% of respondents (*n* = 10) said their families are eating less sugar. In Year 1, only 5% of families reported making this change, but perhaps with the addition of Kaiser Permanente's *Think Your Drink,* many more families commented on things related to sugar and soda pop. Third, 12% of respondents said their families are more aware of the role of nutrition and food in maintaining a healthy life. Not surprisingly, 10% of respondents (*n* = 10) reported drinking less soda and 6% (*n* = 5) said they are drinking more water. While the addition of more fruits and vegetables and the reduction in sugar intake were also common responses in Year 1, the other reported changes from Year 1, including reading more nutrition labels, paying attention to eating more balanced meals and eating less red meat were not mentioned by Family Health Day interview participants in Year 2. Of the interviewees who said they are not making changes in how they approach nutrition, several said it is because they already have very healthy diets and others noted that while P2H has not caused them to change their food choices, the program is reinforcing decisions already being made.

Post-survey respondents were also asked a series of questions about food and nutrition. As Table 1 illustrates, 73% of post-survey respondents Agree or Strongly Agree that their families have made changes in the foods they buy, 73% Agree or Strongly Agree that they have made changes in the way they prepare food and 76% of respondents Agree or Strongly Agree that they are paying more attention to nutrition labels as a result of P2H.

Table 1: Post-Survey Questions Regarding Impact on Healthy Foods

Because of Passport to Health…	Strongly Disagree		Disagree		Agree		Strongly Agree	
	YEAR 1	YEAR 2	YEAR 1	YEAR 2	YEAR 1	YEAR 2	YEAR 1	YEAR 2
Our family has made changes in the foods we buy	7%	3%	24%	23%	54%	58%	15%	15%
Our family has made changes in the way we prepare food	6%	2%	24%	25%	55%	58%	15%	15%
I pay more attention to nutrition labels	6%	2%	17%	21%	52%	54%	25%	23%

As Table 1 illustrates, the post survey results did not differ significantly from Year 1 to Year 2. Interestingly, although teachers reported using the Journal section on nutrition labels more in Year 2 than Year 1, parents/guardians reported paying similar attention to nutrition labels in Years 1 and 2.

Finally, the Focus Families participant was asked each month about food choices in the home and whether P2H was continuing to affect healthy food choices, even when the child was no longer engaged in programming. Throughout the year, the participant mentioned that the family was continuing to make healthy food choices, despite the program ending. This was partly helped by the schools' participation in one of the district-level initiatives to provide fresh fruit for students. According to the Focus Families participant, because her children were continuing to be exposed to new and different fruits at school, they were also more willing to be adventurous with food at home. Despite the emphasis that the Focus Families participant made on healthy food choices, she did share several barriers that were impeding her ability to be as healthy as she would like. Busy schedules and the high cost of fruits and vegetables were the two greatest barriers she needed to overcome. According to this participant, the challenge of juggling school with sports and other afterschool activities decreased her ability to guarantee regular, healthy meals, despite her desire to do so.

Impact on healthy lifestyles

While the previous sections focused on physical activity and nutrition, which are both contributors to a healthy lifestyle, post-survey respondents were also asked if, because of P2H, their families were talking more about healthy food and physical activity and how they relate to health. Eighty-three percent of respondents Agree or Strongly Agree with that statement, again demonstrating no significant difference between Year 1 and Year 2. Supporting this finding, interviews with the Focus Families participant demonstrated that as a family, they were having many more conversations about healthy food, physical activity and how to live a healthy life. In JVA's December interview, when asked whether the family was talking more about how to be healthy, the Focus Family participant told JVA: *"We are noticing it more with our little girl. She has lots of questions and our son [the P2H participant] seems to be coaching his little sister about stuff he learned in the P2H program. Information from us (the parents) seems to hold less weight than information from her older brother."*

Finally, while this topic was only directly addressed in one set of Family Health Day interviews,[17] when families at the first Family Health day were asked if their families were making changes because of engagement in P2H, the majority of respondents said yes. Of those who provided more exact examples of how it was affecting them, many respondents said P2H increased their knowledge and awareness of how nutrition and physical activity contribute to a healthy lifestyle. Others said they learned things they never knew, and that they were more aware of the choices they made and how those choices affected them.

Knowledge and use of parks and recreation centers

On the post-survey, parents were asked about the time their families spent at both the Denver Museum of Nature & Science and at local parks and recreation centers. Table 2, below, illustrates post-survey responses to these questions. As illustrated, and much like results from Year 1, most respondents visited the Museum, parks and recreation centers about the same

[17] After Family Health Day interviews were conducted on January 29, 2011, JVA modified the interview protocol to simplify the questions and garner more specific responses from families. While families at this event were asked about overall family changes as a result of P2H, families at subsequent Family Health Days were asked to reflect, more specifically, on P2H and how it impacted change in their families.

amount during the 2010–2011 school year as during the 2009–2010 school year, prior to their participation in P2H. While in Year 1, 33% of families indicated they visited the Museum more often than in the previous school year, results from Year 2 indicate that only 27% reported visiting the Museum more often during the 2010–2011 school year. Despite this, according to data compiled June 30, 2011, 1,183 P2H families from 29 participating schools redeemed the membership. This is almost double the number of memberships redeemed in Year 1. Of these, 94% were new members, while only 6% were rejoining or renewing their membership.

Table 2: Self-Reported Use of the Museum and Local Parks and Recreation Centers

Compared to last school year my family has…	Less often	The same amount	More often
Visited the Denver Museum of Nature & Science	32%	42%	27%
Gone to a park	11%	48%	42%
Gone to and/or used resources at a recreation center	26%	45%	29%

In addition to questions about the frequency of visits, the post-survey asked families what barriers prevented them from visiting the Museum and parks and recreation centers. The following two tables illustrate their responses. As the tables demonstrate, and similar to responses from Year 1, cost and time considerations were the top two barriers to access listed by families. For the Museum, the next barrier was a lack of transportation (13%), followed by respondents who were not interested in the exhibits (4%) and those who said they didn't know about the Museum (4%). The only difference between these results and those from Year 1 is that in Year 1, 7% of respondents said they didn't know about the Museum, while in Year 2 that number decreased to 4%. Interestingly, and despite marketing to spread the word about the free membership, cost was still listed as the number one barrier to visiting the Museum.

Table 3: Barriers to Visiting the Museum

What keeps your family from visiting the Museum?	Agree		Disagree	
	YEAR 1	YEAR 2	YEAR 1	YEAR 2
It is too expensive	38%	42%	62%	58%
My family does not have time	34%	36%	66%	64%
My family does not have transportation	13%	13%	87%	87%
We did not know about the Museum	7%	4%	93%	96%
We are not interested in the exhibits	3%	4%	97%	96%

Table 4: Barriers to Visiting Parks and Recreation Centers

What keeps your family from accessing recreation centers or parks?	Agree		Disagree	
	YEAR 1	YEAR 2	YEAR 1	YEAR 2
My family does not have time	25%	27%	75%	73%
They are too expensive	24%	25%	76%	75%

What keeps your family from accessing recreation centers or parks?	Agree		Disagree	
	YEAR 1	YEAR 2	YEAR 1	YEAR 2
Limited hours	19%	19%	81%	81%
They are too far	11%	10%	89%	90%
They are not safe	4%	3%	96%	97%

Finally, parents participating in the Family Health Day interviews were asked if they knew where the parks and/or recreation centers were located that were nearest to their home. Ninety-four percent of respondents (*n* = 101) said they did know, while only 6% of respondents (*n* = 6) did not know. Further, while 74% of those respondents (*n* = 75) knew about these places before participating in P2H, 13% of respondents (*n* = 13) learned about local parks and recreation centers through participation in the program.

Did the program encourage students to advocate for healthy changes at home and help families make those changes?

"Passport to Health has helped me as much as it's helped the kids!"

–Passport to Health parent

In addition to the direct programming families have the opportunity to participate in, the Museum hopes that students will share what they are learning in P2H, and in doing so, will advocate for healthy changes and help their families implement these changes. Ninety-two percent of post-survey respondents Agree or Strongly Agree that *Because of Passport to Health my child has talked about science, health and/or physical activity at home.* This number has increased from 86% in Year 1. Further, when Family Health Day interviewees were asked if their child talked about what they were learning in P2H, 80% of respondents (*n* = 90) said yes. Of those respondents, several offered examples of what their child was talking about. Twenty-seven percent (*n* = 24) said their child was talking about exercise and different body systems. Another 23% of respondents (*n* = 21) said their child was talking at home about the Museum, and the components and classes associated with P2H, and 22% (*n* = 20) said their child talked about food choices and nutrition. Finally, 9% (*n* = 8) said their child was talking about how to be healthy overall, without specific mention of details. These responses are quite similar to those from Year 1, when P2H students were most likely to talk about the body, nutrition, eating healthy and healthy foods, or about exercise and the importance of physical activity. Based on these responses, it seems clear that P2H students are talking to their families about the things they learn and how to make changes at home.

"Passport to Health has been a great project and I'm hoping we can keep some of it in play as the kids grow up. Even without P2H programming, we hope we can keep it going so that being healthy is a standard, not a phase."

–Focus Families participant

As previous sections demonstrate, families participating in the Family Health Day interviews and the post-survey indicated they are increasing the amount of physical activity they do, are paying more attention to nutrition labels, are making healthier food choices and are trying to live healthier lives overall.

Families participating in the Family Health Day interviews were asked what was the most important or interesting thing they learned through their participation in P2H. Sixteen percent of respondents (*n* = 18) said the information they learned about nutrition and food, including the recipes they received. Another 16% (*n* = 18) said the most important thing they learned was how much sugar is in soda, with several of those respondents mentioning what they learned about how sugar intake can link to diabetes. Again, this change may be due, in part, to the addition of the *Think Your Drink* station set-up by Kaiser Permanente. Twelve percent of respondents (*n* = 13) said they learned about the importance of exercise and 10% (*n* = 11) said what they learned about the body and body systems were the most important things. Of those who discussed body systems, some specified that what they learned about the heart was most interesting, but the great majority mentioned the *DNA of Taste* activity.

Favorite Passport to Health elements

In the Family Health Day interviews, families were asked if they were enjoying participating in the P2H program. Not surprisingly, 100% of respondents (*n* = 114) said they were enjoying P2H. Of the respondents, some provided examples of their favorite elements or components. Twenty-four percent of respondents (*n* = 27) said they most enjoyed participation in *Expedition Health.* Sixteen percent (*n* = 18) said they most enjoyed the visit to the Museum and the P2H activities there. More specifically, 13% of respondents (*n* = 14) mentioned specific *Expedition Health* and Family Health Day activities, including the Continuation Ceremony, the classroom activities, the movie about climbing Mt. Washington, the bike activity in *Expedition Health*, Kaiser Permanente's *Think Your Drink* and the *DNA of Taste* station. In total, 9% of respondents (*n* = 10) said their favorite part was having the membership and having the opportunity to interact with their family. Finally, 8% of respondents (*n* = 9) said that learning about food, nutrition and health was the best thing about participation in P2H. As can be seen, the bike activity was a favorite activity in both Years 1 and 2, and the family membership and learning about health and nutrition were also listed as favorite elements in both years.

Conclusion

Did the program increase recognition of the value of physical activity, healthy foods and healthy lifestyles?

The following information may help the Museum answer this question:

- According to post-survey respondents, 80% Agree or Strongly Agree that their family is more physically active because of P2H. Supporting this, 77% of Family Health Day interview respondents said their child is more active and 79% said their family is more physically active because of P2H.
- Similarly, 70% of interview respondents said that because of P2H, their child or family is changing the way they approach food or nutrition. Of these respondents, 22% are eating more fruits and vegetables, 13% are eating less sugar, 12% are more aware of the role of nutrition and food in maintaining a healthy life and 10% are drinking less soda.
- Finally, according to the Focus Families participant, her family is continuing to recognize the link between physical activity, healthy food and a healthy lifestyle, long after her son's completion of P2H.

Areas for growth or improvement:

- While evaluation findings seem to illustrate that participation in P2H helped families increase recognition of the value of physical activity, healthy foods and healthy lifestyles, it is not clear to what extent that increased value is being acted upon at home. Because the Museum is fortunate to have the 2011–2012 school year to focus on family engagement and involvement in school-based programs, it seems as though the Museum will have ample opportunities this year to continue exploring the longer-term outcomes and effects of programming on families.

Did the program encourage students to advocate for healthy changes at home and help families make those changes?

The following information may help the Museum answer this question:

- Based on post-survey results, 83% of families Agree or Strongly Agree that because of P2H their family is talking more about healthy food and physical activity, and how they relate to health. Further, 80% of Family Health Day interview respondents said their child is talking about P2H at home and is sharing information with the family.
- According to monthly interviews conducted with the Focus Families participant, her child was not only advocating for healthy changes at home, but was serving as a positive role model and coach for his younger sister.

Areas for growth or improvement

- Similar to Year 1, and because P2H is a program that engages families and students, measuring advocacy on the part of P2H students was challenging this year. While the great majority of P2H families reported that changes are being made at home, it is difficult to distinguish between those that were related to advocacy on the part of the child or based on overall family involvement in the program. Again, because the Museum is fortunate to have the 2011–2012 school year to focus on family engagement and involvement in school-based programs, there might be opportunities to focus on how information from these programs enters the home, how students use information from Museum programs to advocate for changes, and perhaps to educate students on effective ways to advocate for changes at home, or talk with their families about health topics.

Appendix V: Evaluation Tools

The following pages include all P2H evaluation tools.

Key to Appendix V:

Student Pre-survey

This is an important survey to help tell us about your knowledge of health science. This is not a test and no one is going to grade you, so just mark the answer that you think is best.

First, are you a…

- ❑ Girl
- ❑ Boy

Please write your birthday: (For example: My birthday is Oct. 28, 1985)

_____

1. Please circle the food that is *healthier*:
   Baked potato **OR** French fries?

   a. Chocolate cookie **OR** a granola bar?

   b. Baked chips **OR** Hot Cheetos?

   c. Orange juice **OR** an energy drink?

   d. Grilled cheese sandwich **OR** a peanut butter & jelly sandwich?

   e. Fudge brownie **OR** string cheese?

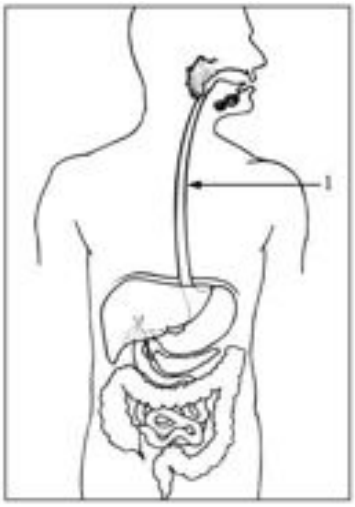
2. Yesterday, how many vegetables did you eat? (Circle your answer) (French fries and chips don't count!)

A) I didn't eat any vegetables yesterday
B) I ate vegetables 1 time yesterday
C) I ate vegetables 2 times yesterday
D) I ate vegetables 3 times yesterday

3. How much food does your body need?

A) As much as you can eat
B) Three square meals a day
C) Exactly what the food pyramid says
D) The food pyramid is a guide, but it depends how much energy you use

4. Look at this picture, which shows some of the organs that can be found inside the human body. What is the main job of the organ with the arrow pointing to it?



A) Carrying air
B) Carrying food
C) Carrying blood
D) Carrying messages from the brain

5. In your body, what two organs work together to make sure that oxygen gets to all the other organs of your body?

A) Lungs and kidneys
B) Heart and lungs
C) Brain and kidneys
D) Lungs and liver

6. Physical activity has an impact on which of the following body systems?

A) Respiratory

B) Circulatory

C) Musculoskeletal (Bones and Muscles)

D) All of these

7. How many times in the last week did you do something that made your heart beat faster and made you breathe hard (like swimming laps, running, playing soccer, playing tag, dancing, skating or anything else)?

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

Almost done!

8. Tell us what you think about science and doing physical activities (like football, dancing, roller skating, running, biking and anything else where you are moving) by checking the box that is closest to how you feel:

	Really Agree	Agree	Disagree	Really Disagree
I am interested in learning about science.	❑	❑	❑	❑
Science helps me understand more about me.	❑	❑	❑	❑
When I am not at school, I still can use science.	❑	❑	❑	❑
I have fun learning science topics.	❑	❑	❑	❑
Eating healthy foods is important for my body.	❑	❑	❑	❑
It is important to do physical activities.	❑	❑	❑	❑
Doing physical activities helps keep me healthy.	❑	❑	❑	❑
I like doing physical activities.	❑	❑	❑	❑
I like eating healthy.	❑	❑	❑	❑
Healthy foods can taste good.	❑	❑	❑	❑

One more question! Please turn the page!

9. Tell us how your family feels about eating healthy and physical activity by checking the box that is closest to how you feel:

	A Lot	Some	Very Little	Never
My family encourages me to eat healthy.	❑	❑	❑	❑
My family encourages me to be active.	❑	❑	❑	❑
My family encourages me to do physical activity.	❑	❑	❑	❑
I do physical activities with my family.	❑	❑	❑	❑
I talk to my family about being healthy.	❑	❑	❑	❑

Thank you so much for your help!

Student Post-survey

This is an important survey to help show us what you have learned in Passport to Health about health science. This is not a test and no one is going to grade you, so just mark the answer that you think is best.

First, are you a…

- ❑ Girl
- ❑ Boy

Please write your birthday: (For example: My birthday is Oct. 28, 1985)

_____

2. Please circle the food that is *healthier*:
   Baked potato **OR** French fries?

   a. Chocolate cookie **OR** a granola bar?

   b. Baked chips **OR** Hot Cheetos?

   c. Orange juice **OR** an energy drink?

   d. Grilled cheese sandwich **OR** a peanut butter & jelly sandwich?

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2. Yesterday, how many vegetables did you eat? (Circle your answer) (French fries and chips don't count!)

A) I didn't eat any vegetables yesterday
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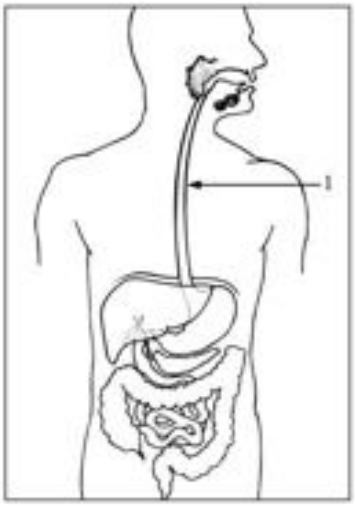
3. How much food does your body need?

A) As much as you can eat
B) Three square meals a day
C) Exactly what the food pyramid says
D) The food pyramid is a guide, but it depends how much energy you use

4. Look at this picture, which shows some of the organs that can be found inside the human body. What is the main job of the organ with the arrow pointing to it?



A) Carrying air
B) Carrying food
C) Carrying blood
D) Carrying messages from the brain

5. In your body, what two organs work together to make sure that oxygen gets to all the other organs of your body?

A) Lungs and kidneys
B) Heart and lungs
C) Brain and kidneys
D) Lungs and liver

6. Physical activity has an impact on which of the following body systems?

A) Respiratory

B) Circulatory

C) Musculoskeletal (Bones and Muscles)

D) All of these

7. How many times in the last week did you do something that made your heart beat faster and made you breathe hard (like swimming laps, running, playing soccer, playing tag, dancing, skating or anything else)?

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

You are getting close!

8. Tell us what you think about science and doing physical activities (like football, dancing, roller skating, running, biking and anything else where you are moving) by checking the box that is closest to how you feel:

	Really Agree	Agree	Disagree	Really Disagree
I am interested in learning about science.	❑	❑	❑	❑
Science helps me understand more about me.	❑	❑	❑	❑
When I am not at school, I still can use science.	❑	❑	❑	❑
I have fun learning science topics.	❑	❑	❑	❑
Eating healthy foods is important for my body.	❑	❑	❑	❑
It is important to do physical activities.	❑	❑	❑	❑
Doing physical activities helps keep me healthy.	❑	❑	❑	❑
I like doing physical activities.	❑	❑	❑	❑
I like eating healthy.	❑	❑	❑	❑
Healthy foods can taste good.	❑	❑	❑	❑

9. Tell us how your family feels about eating healthy and physical activity by checking the box that is closest to how you feel:

	A Lot	Some	Very Little	Never
My family encourages me to eat healthy.	❑	❑	❑	❑
My family encourages me to be active.	❑	❑	❑	❑
My family encourages me to do physical activity.	❑	❑	❑	❑
I do physical activities with my family.	❑	❑	❑	❑
I talk to my family about being healthy.	❑	❑	❑	❑

10. Now, tell us about your experience with Passport to Health by checking the box that is closest to what you think:

	Really Agree	Agree	Disagree	Really Disagree
Because of Passport to Health, I learned more this year in science than I did last year.	❑	❑	❑	❑
Because of Passport to Health, my family is eating healthier at home.	❑	❑	❑	❑
Because of Passport to Health, I am doing more physical activities.	❑	❑	❑	❑
Because of Passport to Health, I have joined a new sport or recreation team, club or class.	❑	❑	❑	❑
Because of Passport to Health, I am living a healthier lifestyle.	❑	❑	❑	❑

Last Question!

11. Mark the box next to ALL of the activities you did this year:

- ❑ The class that a Museum staff person taught at my school
- ❑ The field trip to the Museum with my class
- ❑ The field trip to the Museum with my family
- ❑ Family health night at my school
- ❑ Visited the Museum with my family outside of class
- ❑ Activities in the Passport to Health Journal

NOW . . . Put a circle around the ONE activity that you participated in that was your favorite.

Thank you so much for your help!

Passport to Health – Outcome Evaluation

Student Focus Groups

[TEXT IN ALL CAPS IS NOT READ ALOUD]

Location/Time: School facility during, before or after school (depending on school preference and availability)

Sample: 8–10 fifth-grade students from participating P2H schools

Attendees: One JVA Associate and one school staff member

Incentives: Kids will be offered healthy snacks

WELCOME/OVERVIEW

Hello. Thank you all for participating today. My name is Julia Alvarez and this is _____, and we are working with the Denver Museum of Nature & Science to see what you learned from participating in Passport to Health. Who remembers what the Passport to Health program is? (Ask a student to tell you and make sure they all remember) Great. So, what I want to talk about today are your experiences with the program and what you learned this year. Who can remind us what the four parts of the P2H program are? (ExerScience, Fitness Physiology, Family Fit Fest, Family Health Day). Perfect. So, we want to know whether or not the P2H program changed the way you think about science.

I will be asking you some questions, and if you don't understand them, you can ask me to make them more clear. XXXXXX from your school is also here to listen to the conversation and she will be taking notes so that I can remember what you say when I write a report for the Museum. The information you share today is confidential, I won't be telling the school or your teachers who said what. [ENSURE THEY KNOW WHAT CONFIDENTIAL MEANS] Also, it's important to remember that there are no right or wrong answers to these questions, I just want to know what you think and why. Also, participating is voluntary [ENSURE THEY KNOW WHAT VOLUNTARY MEANS]. So that means that if you want to leave at any time to go back to class you can, just let me know. You can also choose not to answer any question if you don't want to.

Is everyone ready?

OUTCOMES

Student responses to focus group questions should help to indicate that participation in Passport to Health resulted in:

- An increase in their health science content knowledge
- Increased understanding of the value of physical activity and its contributions to a healthy lifestyle
- An increased ability and willingness to advocate for healthy options and behaviors within their family units

QUESTIONS

1. For this question, I want to hear from each one of you. What were the best things about the Passport to Health program?
2. What did you think of fifth-grade science class compared to fourth-grade science class?

a. PROBE: What did you think of science last year?

b. PROBE: What do you think of science now?

Speaking of learning science, I am going to ask you some questions about what you learned this year about science and health

3. What do you think is the most important or interesting thing you learned in P2H?
4. Write down three examples of HEALTHY food? (give out half-sheets of paper)
    i. If all/mostly fruits/vegetables, ask for examples of other foods that are healthy, besides fruits/vegetables
5. Since you started the P2H program, have you changed the kinds of foods you eat?
    a. PROBE: Do you feel like you make healthier choices?
    b. PROBE: Please raise your hand if you read nutrition labels on the backs of food products. Did you do that before? Why/why not?
6. What does it mean to be "healthy"?
7. Can I have three volunteers tell me your three favorite physical activities (activities that get your heart rate up)
    a. PROBE: Why is physical activity important? (this should lead to a conversation about the connection between activity and body systems)
    b. PROBE: Have you changed how physically active you are since P2H started?
    c. PROBE: Do you exercise more?
8. Did you make these changes because of things you learned in P2H?
9. Thinking about what you learned in P2H, please write down one **specific** thing you could do to be healthier?

In addition to learning about you, we want to know what you were able to teach your families about being healthy!

10. Did you talk to your families about P2H?
    a. PROBE: What did you talk to them about?
11. Do you do anything different at home because you participated in P2H? Like what?
    a. PROBE: Do you ask for different food?
    b. PROBE: Do you do more exercise?
    c. PROBE: What is the most important way that your family changed because of P2H?
12. Working with a partner, I would like you to plan a healthy dinner that you could cook with a grown-up in your house. Write or draw what you would make and WHY?
13. Based on what you learned, please write down one, specific thing your family could do to be healthier

14. Talk with a partner about everything you did in P2H (the journal, activities at the Museum, Family Fit Fest, etc.), and I would like each of you to come up with one thing you would change to make P2H better.

CLOSING

Those are all of my questions.

Are there any final comments you would like to make, or do you have any questions for me?

Thank you for participating in this focus group today. Your time is very helpful to us!

Passport to Health Teacher Pre-Survey

Not including this year, how many years have you been a teacher? _____

Not including this year, how many years have you taught 5th grade? _____

Did you teach 5th grade last year? Yes No

Please CIRCLE the answer that best reflects your experience or opinion.

1. In the previous school year, how often did you encourage students to participate in physical activity AT school?

   On a daily basis
   On a weekly basis
   On a monthly basis
   A few times a semester
   About once a semester
   Never
   I did not teach last year

2. In the previous school year, how often did you encourage students to participate in physical activity OUTSIDE of school?

   On a daily basis
   On a weekly basis
   On a monthly basis
   A few times a semester
   About once a semester
   Never
   I did not teach last year

3. Do you think students in your school take advantage of physical activities and resources (such as parks or recreation centers) that are available to them outside of school?

   Most do About half do Most do not None do

4. How would you rate your knowledge of physical activities and resources available to students outside of school?

Non-existent				Extensive
1	2	3	4	5

5. Please indicate how often you did the following in the PREVIOUS school year by circling the appropriate number.

	Never	Very Little	Sometimes	Often	I did not teach last year	I did not teach SCIENCE last year
ncorporate physical fitness into science lessons?	1	2	3	4	5	6
ncorporate nutrition into science lessons?	1	2	3	4	5	6
ncorporate health science concepts[1] into lessons outside of science (e.g., math or literature)?	1	2	3	4	5	6

[1] The Denver Museum of Nature & Science defines health science as: The study and gaining of new knowledge of human biology, disease, and wellness and the application of these discoveries to your life.

6. Please indicate the degree to which you agree or disagree with each of the following statements by circling the appropriate number.[1]

	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
When teaching health science, I usually welcome student questions.	1	2	3	4	5
feel I have the necessary skills to teach health science.	1	2	3	4	5
am typically able to answer students' health science questions.	1	2	3	4	5
Given a choice, I would encourage the principal to evaluate my health science teaching.	1	2	3	4	5
feel comfortable improvising during health science lab experiments.	1	2	3	4	5
feel that I am able to teach health science as well as I teach most other subjects.	1	2	3	4	5
After I have taught a health science concept once, I feel confident teaching it again.	1	2	3	4	5
feel excited about teaching health science lessons.	1	2	3	4	5
know the steps necessary to teach health science concepts effectively.	1	2	3	4	5
can explain to students why health science experiments work.	1	2	3	4	5
am continually finding better ways to teach health science.	1	2	3	4	5
generally teach health science effectively.	1	2	3	4	5
I enjoy teaching health science content.	1	2	3	4	5
find health science a relatively easy topic to teach.	1	2	3	4	5
understand health science concepts well enough to teach health science effectively.	1	2	3	4	5
know how to make students interested in health science.	1	2	3	4	5
feel comfortable when teaching health science content that I have not taught before.	1	2	3	4	5
feel I have a good understanding of the health science concepts I teach.	1	2	3	4	5
feel energized after teaching new health science content.	1	2	3	4	5
Even when I am busy, I always try to make time to teach health science content.	1	2	3	4	5

7. The Denver Museum of Nature & Science provides resources for teachers at the museum and on its Web site. Please put a check next to all of the resources you have used in the past:

Online guides	_____	Exhibit activity guides	_____
Museum visits w/ class	_____	Free previews	_____
Pre-visit activities	_____	Post-visit activities	_____
Professional development	_____	Museum visit on own time (not a preview)	_____

Thank You!

[1] Questions taken from the SETAKIST survey published in: Roberts, Kyle and Henson, Robin K., "Self-Efficacy Teaching and Knowledge Instrument for Science Teachers (SETAKIST): A Proposal for New Efficacy Instrument." Presented at the Annual Meeting of the Mid-South Educational Research Association (28th, Bowling Green, KY, November 17-19, 2000).

Passport to Health Teacher Post-Survey

Not including this year, how many years have you been a teacher? _____

Not including this year, how many years have you taught 5th grade? _____

Did you teach 5th grade last year? Yes No

Please CIRCLE the answer that best reflects your experience or opinion.

1. In the current school year, how often did you encourage students to participate in physical activity AT school?

   On a daily basis
   On a weekly basis
   On a monthly basis
   A few times a semester
   About once a semester
   Never
   I did not teach last year

2. In the current school year, how often did you encourage students to participate in physical activity OUTSIDE of school?

   On a daily basis
   On a weekly basis
   On a monthly basis
   A few times a semester
   About once a semester
   Never
   I did not teach last year

3. Do you think students in your school take advantage of physical activities and resources (such as parks or recreation centers) that are available to them outside of school?

   Most do About half do Most do not None do

4. How would you rate your knowledge of physical activities and resources available to students outside of school?

   Non-existent 1 2 3 4 Extensive 5

5. Please indicate how often you did the following in the CURRENT school year by circling the appropriate number.

	Never	Very Little	Sometimes	Often	I did not teach this year	I did not teach SCIENCE this year
Incorporate physical fitness into science lessons?	1	2	3	4	5	6
Incorporate nutrition into science lessons?	1	2	3	4	5	6
Incorporate health science concepts[1] into lessons outside of science (e.g., math or literature)?	1	2	3	4	5	6

[1] The Denver Museum of Nature & Science defines health science as: The study and gaining of new knowledge of human biology, disease, and wellness and the application of these discoveries to your life.

6. Please indicate the degree to which you agree or disagree with each of the following statements by circling the appropriate number.[1]

	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
a. When teaching health science, I usually welcome student questions.	1	2	3	4	5
b. I feel I have the necessary skills to teach health science.	1	2	3	4	5
c. I am typically able to answer students' health science questions.	1	2	3	4	5
d. Given a choice, I would encourage the principal to evaluate my health science teaching.	1	2	3	4	5
e. I feel comfortable improvising during health science lab experiments.	1	2	3	4	5
f. I feel that I am able to teach health science as well as I teach most other subjects.	1	2	3	4	5
g. After I have taught a health science concept once, I feel confident teaching it again.	1	2	3	4	5
h. I feel excited about teaching health science lessons.	1	2	3	4	5
i. I know the steps necessary to teach health science concepts effectively.	1	2	3	4	5
j. I can explain to students why health science experiments work.	1	2	3	4	5
k. I am continually finding better ways to teach health science.	1	2	3	4	5
l. I generally teach health science effectively.	1	2	3	4	5
m. I enjoy teaching health science content.	1	2	3	4	5
n. I find health science a relatively easy topic to teach.	1	2	3	4	5
o. I understand health science concepts well enough to teach health science effectively.	1	2	3	4	5
p. I know how to make students interested in health science.	1	2	3	4	5
q. I feel comfortable when teaching health science content that I have not taught before.	1	2	3	4	5
r. I feel I have a good understanding of the health science concepts I teach.	1	2	3	4	5
s. I feel energized after teaching new health science content.	1	2	3	4	5
t. Even when I am busy, I always try to make time to teach health science content.	1	2	3	4	5

7. The Denver Museum of Nature & Science provides resources for teachers at the museum and on its website. Please put a check next to all of the resources you used THIS YEAR:

Online guides	_____	Exhibit activity guides	_____
Museum visits w/ class	_____	Free previews	_____
Pre-visit activities	_____	Post-visit activities	_____
Professional development	_____	Museum visit on own time (not a preview)	_____

[1] Questions taken from the SETAKIST survey published in: Roberts, Kyle and Henson, Robin K., "Self-Efficacy Teaching and Knowledge Instrument for Science Teachers (SETAKIST): A Proposal for New Efficacy Instrument." Presented at the Annual Meeting of the Mid-South Educational Research Association (28th, Bowling Green, KY, November 17-19, 2000).

8. Please indicate the degree to which you agree or disagree with each of the following statements about Passport to Health (P2H) by circling the appropriate number.

	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
a. Students who participated in P2H this year were able to better identify and understand the purpose of the body systems than similar groups of students I have taught this content to	1	2	3	4	5
b. Students who participated in P2H this year were able to better understand the connection between different body systems than similar groups of students I have taught this content to	1	2	3	4	5
c. Students who participated in P2H this year were able to better understand the connection between the body systems and physical activity than other groups of students their age	1	2	3	4	5
d. Students who participated in P2H this year were able to better understand the connection between the body systems and healthy eating than similar groups of students	1	2	3	4	5
e. Families whose students who participated in P2H seemed more involved in their student's health than families of similar groups of students	1	2	3	4	5
f. As a result of P2H, I integrated health science content into other lessons such as reading and math	1	2	3	4	5
g. As a result of P2H, I was more comfortable teaching health science content this year than previous years	1	2	3	4	5
h. As a result of P2H, I was more likely to encourage students to participate in physical activity AT school this year than previous years	1	2	3	4	5
i. As a result of P2H, I was more likely to encourage students to participate in physical activity OUTSIDE of school this year than previous years	1	2	3	4	5
j. As a result of P2H, I learned more about the physical activities my students participate in this year than I have in previous years	1	2	3	4	5
k. As a result of P2H, I learned more about the physical activities and recreational opportunities available to my students	1	2	3	4	5

9. As a result of Passport to Health, did the number of hours you spent teaching or focusing on science curriculum change?
   No, it stayed the same
   Yes, it increased by approximately 1–5 hours this year in comparison with last year
   Yes, it increased by approximately 6–10 hours this year in comparison with last year
   Yes, it increased by approximately 10–15 hours this year in comparison with last year
   Yes, it increased by approximately 15–20 hours this year in comparison with last year
   Yes, it increased by more than 20 hours this year in comparison with last year
   Yes, but it decreased
   If it decreased, why?

   _____

   _____

P2H Teacher interviews

Outcomes to measure:

Student outcomes:

1.2: students' abilities to correctly identify and know the purpose of the circulatory, respiratory and muscular-skeletal systems
1.3: Students' ability to demonstrate understanding of the connection between systems
2.1: Students' understanding on the connection between physical activity and their body's systems
3.1: Students' ability to identify healthy food options

Teacher outcomes:

1.1: Teachers' attitudes toward teaching health science
1.3: Teachers' confidence in their ability to teach health science
2.2: Teachers' awareness of physical activities students generally participate in
2.3: Teachers' awareness of the physical activities available to students
2.4: Teachers' encouragement of physical activities inside and outside the classroom
3.2: Teachers' use of P2H resources
3.3: Teachers' use of non-P2H museum resources

School outcomes:

1.2: Time spent on health science instruction and integration of health science in math and literacy lessons
1.3: Attitude toward teaching science
1.4: Attitude toward P2H by teachers, principal and personnel

* Also want to ask about family involvement and what could have been stronger? What are more effective ways to connect with/engage families?

QUESTIONS:

1. First, please tell me what your role was in the implementation of Passport to Health at your school? (e.g., primary contact, administrator, family liaison, fifth-grade teacher [ask what subject they emphasize], gym teacher, etc.)
2. Next, please tell me how Passport to Health affected the way you teach
    a. Were you able to integrate health science into your non-science teaching? How?
        i. What made it easy to integrate?
        ii. What were barriers/what made it difficult to integrate?
        iii. What can the Museum change next year to make it easier for you to integrate Passport to Health into your daily classroom teaching?
    b. Did Passport to Health give you more confidence in your abilities to teach health science?
3. Did you utilize Passport to Health and Museum resources this year, including the online course, the online guides, activities from the journal, monthly newsletter, other materials or strategies learned in last year's teacher workshop?
    a. How effective were they?
    b. What could the Museum do to increase teacher participation in/use of these services/supports?
4. Did you attend the teacher workshop in the summer?
    a. How well prepared did you feel for the year of implementation?
    b. What could the museum have done differently to better prepare you?
        i. What would you change about/add to the teacher workshop?
5. Please tell me a little bit about how Passport to Health affected your students or your classroom
    a. This year, were your students better able to identify body systems and understand the connection between body systems?
    b. Did Passport to Health affect the way your students approached science? How?
    c. Did you notice them making any changes in the foods they eat? Like what?
    d. How about in the amount of physical activity they do? How?
6. How engaged were the parents/families at your school?
    a. What can the Museum do to increase engagement/participation in Passport to Health programming?
    b. What is the best way to reach out to/communicate with parents/families?

i. For evaluation purposes (consent forms, surveys, etc.)

ii. For events (Family Health Day, Family Fit Fest, etc.)

1. Did the museum couple Family Fit Fest with other school events? (e.g. back to school night, math night, etc.)
2. If yes, was it more successful as a result?
3. If no, does your school have events that Family Fit Fest could be coupled with?

c. What are the barriers to reaching parents?

7. How did your school engage in Passport to Health programming?
   a. How did your principal/school leadership support Passport to Health implementation?
   b. Did the program timeline work for your school?
      i. What would you do differently?
8. What was your favorite thing about Passport to Health?
9. What is one thing the Museum could do differently/better?
10. What piece of advice you would give a teacher who was new to Passport to Health?
11. What can we, as evaluators, do to better reach out to and communicate with teachers and school staff next year?
12. Any final thoughts or things you would like to add?

THANK YOU!!

DENVER MUSEUM OF NATURE & SCIENCE

Journal Observation Sheet

Journal Observation # _____
School ID _____
Teacher ID _____

Journal Observation Instructions: Flip through the journal and count the number of activities with any level of completion. Next select a sample (aim for 1/3 of total completed) of activities that were completed. Review the activities and answer the questions below using the following parameters:

Complete understanding–answers was appropriate for question asked (does not have to be right)
Some level of understanding–answer was related to what question asked but not necessarily appropriate
No level of understanding–answer does not relate to question asked

Total Number of Activities Complete? _____

Activity 1:
Please rate the level of understanding of each activity:
_____ Complete understanding
_____ Some level of understanding
_____ No level of understanding

Did the student perform reflection for this activity?
_____ Yes
_____ No

Activities Completed _____

Total Activities _____

Activity 2:
Please rate the level of understanding of each activity:
_____ Complete understanding
_____ Some level of understanding
_____ No level of understanding

Did the student perform reflection for this activity?
_____ Yes
_____ No

Activities Completed _____

Total Activities _____

Activity 3:
Please rate the level of understanding of each activity:
_____ Complete understanding
_____ Some level of understanding
_____ No level of understanding

Did the student perform reflection for this activity?
_____ Yes
_____ No

Activities Completed _____

Total Activities _____

Activity 4:
Please rate the level of understanding of each activity:
_____ Complete understanding
_____ Some level of understanding
_____ No level of understanding

Did the student perform reflection for this activity?
_____ Yes
_____ No

Activities Completed _____

Total Activities _____

Activity 5:
Please rate the level of understanding of each activity:
_____ Complete understanding
_____ Some level of understanding
_____ No level of understanding

Did the student perform reflection for this activity?
_____ Yes
_____ No

Activities Completed _____

Total Activities _____

OVERALL:
Please identify activities that seemed to confuse students:

Please identify any information you see students writing down that is not part of the journal:

Standards:

*Only mark ONE answer in response to each question

*Make a judgement of understanding on non-reflective questions not reflective ones

*Please report the number of non-reflection questions completed and available to help us gauge level of participation

* A student performed reflection if they answer at least one reflection question in the section

*If there is no reflection question in the section write NA in response to the question

DENVER MUSEUM OF NATURE & SCIENCE

Passport to Health Journal

User Survey

The Passport to Health (P2H) journals are intended to engage students and facilitate learning. They include observation sheets or pages for your students to use with various activities, listed below. JVA and the Museum would like to get information about which journal articles you utilized during the course of the year. Please put an X next to each of the journal activities that you used in your classroom:

1. One lined page for students to create their own title page and/or table of contents _____

2. Pre-Visit Activities (*Expedition Health* Online Guide)
   - Current Events _____
   - Reaction Times _____
   - Calories and Energy _____
   - Inherited Traits _____

3. Fitness Physiology (Pedometer Challenge notes will be provided once you schedule the class.)
   - Page used during Fitness Physiology class
   - Charting Your Activity (Pedometer Challenge) _____
   - How Many Steps? (Pedometer Challenge) _____
   - Postcard Activity (Pedometer Challenge)

4. ExerScience (Each page corresponds to a different station in the class.)
   - Brain
   - Bones and Muscles
   - Lungs
   - Heart
   - Energy

5. Unguided Tour of *Expedition Health* _____
(Notes were provided when you scheduled ExerScience.)

6. Post-Visit Activities (*Expedition Health* Online Guide)
   - Graphing Activity _____
   - Body System Simile _____
   - Goal Letter _____
   - Food Labels _____
   - Nutritious Nibbles _____
   - What's Your Sport? _____

7. 10 graph pages to supplement the above _____

8. What (if anything) was the major barrier to utilizing the Passport to Health Journal in your classroom?

9. To your knowledge, did the PE teacher utilize the Passport to Health Journal? Yes No

   If yes, list any activities that you know they may have used:

**Please note that you are not asked to mark highlighted items because they are activities that were used by Museum educators

DENVER MUSEUM OF NATURE & SCIENCE

Passport to Health Parent/Guardian Survey

Dear Parent or Guardian,

This year, your child participated in the Passport to Health program offered by the Denver Museum of Nature & Science. We are surveying parents and guardians to learn about your experiences with the program in order to learn how it may have affected your family. Please complete the following confidential survey to provide us with your feedback. Please return the survey to your child's teacher.

Please mark the appropriate response:

Because of Passport to Health. . .	Strongly disagree (1)	Disagree (2)	Agree (3)	Strongly agree (4)
My child has talked about science, health and/or physical activity at home	❑	❑	❑	❑
Our family has made changes in the foods we buy	❑	❑	❑	❑
Our family has made changes in the way we prepare food	❑	❑	❑	❑
Our family has increased the amount of physical activity we do	❑	❑	❑	❑
I pay more attention to nutritional labels	❑	❑	❑	❑
Our family has talked about healthy food and physical activity and how they relate to health	❑	❑	❑	❑

Compared to last school year my family has…	Less often this school year	The same amount	More often this school year
Visited the Denver Museum of Nature & Science	❑	❑	❑
Gone to a park	❑	❑	❑
Gone to and/or used resources at a recreation center	❑	❑	❑

What (if anything) keeps your family from visiting the Museum (check ALL that apply)

- ❑ It is too expensive
- ❑ My family does not have transportation
- ❑ My family does not have time
- ❑ We are not interested in the exhibits
- ❑ We did not know about the Museum
- ❑ Other (write below)

_____

What (if anything) keeps your family from accessing recreation centers or parks (check ALL that apply)

- ❑ They are too expensive
- ❑ They are too far
- ❑ They are not safe
- ❑ Limited hours
- ❑ My family does not have time
- ❑ Other (write below)

_____

THANK YOU! YOUR RESPONSES ARE IMPORTANT TO US!

DENVER MUSEUM OF NATURE&SCIENCE

Encuesta sobre Pasaporte a la Salud

Querida padre o guardián,
Este año, su hijo/a participó en el programa Pasaporte a la Salud que se ofrece a través del Museo de Naturaleza y Ciencias. Estamos realizando una encuesta para padres y guardianes para aprender sobre sus experiencias con el programa para que podemos aprender como el programa ha afectado a su familia. Por favor contesta la siguiente encuesta confidencial para proveer sus reacciones y mándelo a la escuela con su estudiante para que se lo entregue al maestro/a.

Favor de marcar el cuadrito con la descripción más cercana a sus sentimientos:

Por haber participado en Pasaporte a la Salud…	Totalmente en desacuerdo (1)	No estoy de acuerdo (2)	Estoy de acuerdo (3)	Totalmente de acuerdo (4)
Mi hijo/a ha hablado más de las ciencias, la salud y/o actividades físicas en la casa	❑	❑	❑	❑
Mi familia ha cambiado las comidas que compra	❑	❑	❑	❑
Mi familia ha cambiado las maneras en que prepara la comida/los alimentos	❑	❑	❑	❑
Mi familia ha aumentado la cantidad de actividades físicas que hace	❑	❑	❑	❑
He prestado más atención a la información nutricional	❑	❑	❑	❑
Mi familia ha hablado de la comida sana, actividades físicas y como relacionan a la salud	❑	❑	❑	❑

En comparación al año escolar pasado, mi familia ha…	Menos veces este año escolar	Lo mismo	Más veces este año escolar
Visitado al Museo de la Naturaleza & las Ciencias	❑	❑	❑
Ido a un parque	❑	❑	❑
Ido y/o usado recursos en un centro de recreación	❑	❑	❑

¿Qué (si algo) impide a su familia de visitar al Museo? (Marca TODOS que aplican)

- ❑ Está demasiado caro
- ❑ No tenemos transportación
- ❑ No tenemos tiempo
- ❑ No tenemos interés en las exposiciones
- ❑ Nosotros no supimos sobre el Museo
- ❑ Otro (escribelo por abajo)

_____

¿Qué (si algo) impide a su familia de usar los parques o centros de recreación? (Marca TODOS que aplican)

- ❑ Están demasiado caros
- ❑ Están demasiado lejos
- ❑ No están seguros
- ❑ Tienen horas limitadas
- ❑ No tenemos tiempo
- ❑ Otro (escribelo por abajo)

_____

DENVER MUSEUM OF NATURE&SCIENCE

Passport to Health—Outcome Evaluation
Parent Interviews

OUTCOMES:

Family responses to interview questions should help to indicate that participation in Passport to Health resulted in:

- Changes in students' attitudes and behaviors in relationship to physical activity
- Changes in students' attitudes toward, knowledge of and behaviors toward healthy food options
- Increases in families' knowledge of, activities and behaviors around physical activity and healthy food options

We also hope to learn about the families' overall experiences with

- Passport to Health
- The Denver Museum of Nature and Science

INTRODUCTION

Do you have five minutes to participate in a short conversation about Passport to Health? Great, Thanks. My name is _____ , and I am helping the Museum get a sense of what families think of the Passport to Health program so that we can help make it even better next year. We also want to understand how the Passport to Health program has affected your child and how it may have affected your family.

Before we begin, I want to make sure you know what was part of the Passport to Health program, as you may have participated in other programs as well. Family participation in Passport to Health includes Family Fit Fest at your child's school where you do health-centered activities, today's Family Health Day at the Museum, and a free, one-year family membership to the Museum. Your fifth grader has also done a Museum program at their school and a field trip to the Museum. (Confirm knowledge)

INTRODUCCION EN ESPAÑOL

¿Tiene usted cinco minutos para participar en una conversación sobre Pasaporte a la Salud? Gracias! Me llamo _____ y estoy trabajando con el Museo para evaluar el programa y decidir como el Museo pueda mejorar el programa en el año siguiente. También queremos aprender como el Pasaporte a la Salud ha afectado su hijo/a o su familia.

Antes de empezar, quiero asegurar que usted sabe que es parte de Pasaporte a la Salud. El programa incluye actividades para la familia, por ejemplo la Noche de Salud Familiar en la escuela de su hijo/a, donde hizo actividades sobre la salud, también el programa de hoy se llama el Día de Salud Familiar y finalmente, una Membresía Familiar al Museo. Su hijo/a en quinto grado también ha participado en un programa en la escuela y otro aquí en el Museo enfocando en la salud, las actividades físicas y la comida sana. ¿Recuerda usted todos estos componentes? Perfecto ¡Entonces, empecemos!

QUESTIONS FOR 1.29.11

1. What school does your child attend?
    a. PROBE FOR **EAGLETON AND PARIS ONLY**
        i. What are you most excited about with the P2H program?

        ii. Have you done or seen anything at the Museum today that might encourage you to make a change in the way you approach nutrition or physical activity?

        iii. Thank you for your participation! Enjoy the rest of the day.
2. Have you enjoyed participating in the P2H program?

3. What have been the best parts?

4. Have you noticed any changes in your child or your family as a result of P2H?

    a. PROBE: Does your child talk about what they learn in P2H at home? Like what?

    b. PROBE: Has P2H affected the way your child or family approaches nutrition or the foods you eat? How?

    c. PROBE: What about physical activity?
        i. Is your child more physically active as a result of P2H?

        ii. Is your family more physically active as a result of P2H?

        iii. Do you know where the rec centers/parks are in your community?
            1. Did you know this before P2H?
5. What is the most important way your family has changed because of P2H?

THANK YOU!

PREGUNTAS EN ESPANOL

1. ¿Que escuela asiste su hijo/a?
    a. PROBE FOR **EAGLETON AND PARIS ONLY**
        i. ¿Esta Ud. emocionado a participar en P2H? Que componente en particular?
        ii. ¿Ha hecho o ha visto algo en el Museo hoy que va a reforzar que haga un cambio en la manera en que piensa ud acerca a la nutrición o actividades físicas?
        iii. Gracias por participar. Espero que disfrutes el dia!
2. ¿Ha disfrutado participar en el programa Pasaporte a la Salud?
3. ¿Cuales son sus componentes favoritas?
4. ¿Ha observado algunos cambios en su hijo o familia por su participación en Pasaporte a la Salud?
    a. PROBE: por ejemplo, ¿habla su hijo sobre cosas que aprendió en Pasaporte a la Salud? ¿Cómo que?
    b. PROBE: ¿El programa ha afectado la manera en que su hijo o familia piense en la nutrición o las cosas que come? ¿Cómo?
    c. PROBE: ¿Qué sobre actividades físicas?
        i. ¿Está su hijo más activo por causa del programa?
        ii. ¿Qué sobre la familia? ¿Haga más actividades físicos?
        iii. ¿Sabe ud. donde están los parques o los centros de recreación en su comunidad?
            1. ¿Sabia este información antes de Pasaporte a la Salud?
5. ¿Cuál es la manera más importante en que su familia ha cambiado por causa del programa?

QUESTIONS FOR 2.19.11

1. What school does your child attend?
    a. PROBE FOR ** Cole, Charles M. Schneck (CMS), Eagleton, Northeast **
        i. What are you most excited about with the P2H program?
        ii. Have you done or seen anything at the Museum today that might encourage you to make a change in the way you approach nutrition or physical activity?
        iii. Thank you for your participation! Enjoy the rest of the day.

** FOR HARRINGTON, KIPP, STUKEY **

2. Have you enjoyed participating in the P2H program?
3. What have been the best parts?
4. Does your child talk about what they learn in P2H at home? Like what?
5. Has P2H affected the way your child or family approaches nutrition or the foods you eat? How?
6. Is your child more physically active as a result of P2H?
7. Is your family more physically active as a result of P2H?
8. Do you know where the rec centers/parks are in your community?
    a. Did you know this before P2H?
9. What is the most interesting thing you have learned through P2H?

THANK YOU!

PREGUNTAS EN ESPANOL

1. ¿Que escuela asiste su hijo/a?
    a. PROBE FOR ** Cole, Charles M. Schneck (CMS), Eagleton, Northeast **
        i. ¿Esta Ud. emocionado a participar en P2H? Que componente en particular?
        ii. ¿Ha hecho o ha visto algo en el Museo hoy que va a reforzar que haga un cambio en la manera en que piensa ud acerca a la nutrición o actividades físicas?
        iii. Gracias por participar. Espero que disfrutes el dia!

** FOR HARRINGTON, KIPP, STUKEY **

2. ¿Ha disfrutado participar en el programa Pasaporte a la Salud?
3. ¿Cuales son sus componentes favoritas?
4. ¿Habla su hijo sobre cosas que aprendió en Pasaporte a la Salud? ¿Cómo que?
5. ¿El programa ha afectado la manera en que su hijo o familia piense en la nutrición o las cosas que come? ¿Cómo?
6. ¿Está su hijo más activo por causa del programa?
7. ¿Qué sobre la familia? ¿Haga más actividades físicos?
8. ¿Sabe ud. donde están los parques o los centros de recreación en su comunidad?
    a. ¿Sabia este información antes de Pasaporte a la Salud?
9. ¿Cuál es la cosa más interesante que aprendio en P2H?

QUESTIONS FOR 4.09.11

1. What school does your child attend?

    a. PROBE FOR ***CLYDE MILLER only***

        i. What are you most excited about with the P2H program?

        ii. Have you done or seen anything at the Museum today that might encourage you to make a change in the way you approach nutrition or physical activity?

        iii. Thank you for your participation! Enjoy the rest of the day.

2. Have you enjoyed participating in the P2H program?

3. What have been the best parts?

4. Does your child talk about what they learn in P2H at home? Like what?

5. Has P2H affected the way your child or family approaches nutrition or the foods you eat? How?

6. Is your child more physically active as a result of P2H?

7. Is your family more physically active as a result of P2H?

8. Do you know where the rec centers/parks are in your community?

    a. Did you know this before P2H?

9. What is the most interesting thing you have learned through P2H?

THANK YOU!

PREGUNTAS EN ESPANOL

1. ¿Que escuela asiste su hijo/a?
    a. PROBE FOR **CLYDE MILLER ONLY**
        i. ¿Esta Ud. emocionado a participar en P2H? Que componente en particular?
        ii. ¿Ha hecho o ha visto algo en el Museo hoy que va a reforzar que haga un cambio en la manera en que piensa ud acerca a la nutrición o actividades físicas?
        iii. Gracias por participar. Espero que disfrutes el dia!
2. ¿Ha disfrutado participar en el programa Pasaporte a la Salud?
3. ¿Cuales son sus componentes favoritas?
4. ¿Habla su hijo sobre cosas que aprendió en Pasaporte a la Salud? ¿Cómo que?
5. ¿El programa ha afectado la manera en que su hijo o familia piense en la nutrición o las cosas que come? ¿Cómo?
6. ¿Está su hijo más activo por causa del programa?
7. ¿Qué sobre la familia? ¿Haga más actividades físicos?
8. ¿Sabe ud. donde están los parques o los centros de recreación en su comunidad?
    a. ¿Sabia este información antes de Pasaporte a la Salud?
9. ¿Cuál es la cosa más interesante que aprendio en P2H?

QUESTIONS FOR 4.30.11

1. What school does your child attend?

2. Have you enjoyed participating in the P2H program?

3. What have been the best parts?

4. Does your child talk about what they learn in P2H at home? Like what?

5. Has P2H affected the way your child or family approaches nutrition or the foods you eat? How?

6. Is your child more physically active as a result of P2H?

7. Is your family more physically active as a result of P2H?

8. Do you know where the rec centers/parks are in your community?
    a. Did you know this before P2H?

9. What is the most interesting thing you have learned through P2H?

THANK YOU!

PREGUNTAS EN ESPANOL

1. ¿Que escuela asiste su hijo/a?

2. ¿Ha disfrutado participar en el programa Pasaporte a la Salud?

3. ¿Cuales son sus componentes favoritas?

4. ¿Habla su hijo sobre cosas que aprendió en Pasaporte a la Salud? ¿Cómo que?

5. ¿El programa ha afectado la manera en que su hijo o familia piense en la nutrición o las cosas que come? ¿Cómo?

6. ¿Está su hijo más activo por causa del programa?

7. ¿Qué sobre la familia? ¿Haga más actividades físicos?

8. ¿Sabe ud. donde están los parques o los centros de recreación en su comunidad?
    a. ¿Sabia este información antes de Pasaporte a la Salud?

9. ¿Cuál es la cosa más interesante que aprendio en P2H?

DENVER MUSEUM OF NATURE&SCIENCE

Focus Family Initial Screening

The Denver Museum of Nature & Science (the Museum) is hoping to learn more about the impact of its Passport to Health (P2H) program on participating students and their families. In order to do this, the Museum has hired JVA Consulting to conduct an external evaluation. Part of this evaluation is the implementation of the Focus Families program. JVA is recruiting families who are willing to participate in a case study over the course of the school year. Focus Families are those families that agree to discuss ongoing activities, physical activities and changes in behaviors in their child and family, as their child participates in the P2H program. I will contact you by phone once each month and ask a few questions about the food choices and physical activities of your family and child. As a thank you, we will send you a $15 King Soopers gift card for each month that your participation continues.

If you are willing to participate in this important program, I have a few initial questions and then I will send you an agreement to look over and sign. Once I received your signed agreement, I will send your first gift card and we will schedule our first monthly conversation.

Do you have any questions about the Focus Families program or the Passport to Health program in general?

After hearing more about the program and its purpose, are you willing to participate as a Focus Family?

Thank you!

Name:

Address:

Home phone:

Cell phone:

How many children do you have and what are their ages and grade levels?

What school does your fifth grader attend?

How many members of your family live in the home?

INITIAL SCREENING QUESTIONS:

1. **What have you noticed since the start of the P2H program at your child's school?**

2. **Have you redeemed your free Museum membership?**
    a. **If no, why not?**
    b. **If yes, how often does your family visit the Museum?**

3. **Have you observed any changes in your child as a result of P2H?**
    a. **PROBE: any changes in the level of physical activity?**
    b. **PROBE: any changes in the food choices he or she is making?**

4. **Have you observed any changes in your family as a result of P2H?**
    a. **PROBE: any changes in your family's level of physical activity?**
    b. **PROBE: any changes in the food choices you are making?**

Thank you very much for agreeing to participate in the Focus Families program. I will send the participation agreement to the address you provided and as soon as I get the signed agreement back, I will send you your first King Soopers gift card.

I would like to schedule a time for our first 10–15 minute conversation, to occur next month sometime. When would be a good time for us to talk?

MONTHLY CONVERSATION: _____

At the end of that conversation, we will schedule the next one.

Thanks again, and if you have any additional questions, please don't hesitate to get in touch with me. I look forward to speaking with you next month.

Focus Family Monthly Assessment Questionnaire

The Denver Museum of Nature and Science wants to learn more about the impact of its Passport to Health (P2H) program on students and their families. Focus Families are families that agree to document ongoing activities, physical activities and changes in behaviors as their child participates in the P2H program. Families are contacted monthly and the following questions are posed.

1.) **Have you noticed any changes in your family as a result of P2H?**
    a. **PROBE: are you making different food choices?**
    b. **PROBE: Is your family more physically active?**

2.) **Have you noticed any difference in the food choices your child is making since the P2H program began?**

3.) **Has your child's level of physical activity changed since the P2H program began?**

4.) **As a result of P2H, are you having more conversations with your child or your family about how to be healthy?**

5.) **What are some barriers that you, your child or your family face in trying to live a healthier lifestyle?**

6.) **Do you have any other thoughts about the P2H program?**

7.) **When would be a good time for us to talk next month?**

THANK YOU for your continued participation, I will put your King Soopers card in the mail today!!