

A close-up photograph of a hand with blue nail polish pointing to a globe of the world. The globe is positioned on the left side of the frame, showing parts of Africa and the Middle East. The hand is reaching in from the right side. The background is a blurred window with a view of a cityscape.

CHANGE IS SIMPLE

PROGRAM EVALUATION

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Improving Lives Through Evaluation
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Executive Summary

The purpose of this program evaluation was to measure Change is Simple's impact on students, families, and communities relative to their mission. Specifically, the program evaluation worked with Change is Simple stakeholders to identify short, medium, and long-term outcomes and impacts and then utilized a mixed methods research design to measure the extent to which the organization has achieved these goals. The executive summary provides an overview of the program description, program evaluation methodology, findings, and recommendations. The program evaluation results indicate that Change is Simple has achieved and surpassed its short- and medium-term goals based on both quantitative and qualitative data. The evaluation concludes with a series of strategies to strengthen Change is Simple's program portfolio, expand the program footprint, and diversify the organizational funding streams.

Program Description

Change is Simple's mission is to instill lifelong social and environmental responsibility through experiential learning that inspires action for healthy people, planet, and community. Change is Simple partners with public schools in Massachusetts to provide an experiential STEAM program. During the 2019-2020 school year, the organization provided experiential, hands-on, in-person lessons to 11,100 students in 449 classrooms and online across 101 cities in Massachusetts, 44 states, and 46 countries. Differing from traditional environmental education, Change is Simple shifts the paradigm from a nature driven perspective to one centering on children's lives and the systems and products they use every day; specifically, how the choices people make influence the natural world around us. Their exciting hands-on lessons integrate directly into public school classrooms and curriculum covering topics from ecosystems to renewable energy to engineering. Topics build off one another, culminating in four years of education that touches upon nearly every facet of environmental science.

Change is Simple strives to inspire elementary students to adopt lifelong environmental and social responsibility through a comprehensive environmental science and sustainability curriculum. The Change is Simple education model transforms classrooms into construction zones and ecosystems, and students into engineers and scientists. The organization integrates relevant science and sustainability into classrooms, enabling students to apply math, English, and social studies to address critical world issues. The mission of Change is Simple is to instill lifelong social and environmental responsibility through experiential learning that inspires action for healthy people, planet and community.

In order to fulfill their mission, Change is Simple delivers an experiential curricular program for students, across school contexts, in incubator schools in metro Boston and is aligned with Massachusetts Curriculum Standards. Change is Simple's logic model is grounded in the understanding that students in grades 3 through 8 are at a particular age where they are most able to learn skills and knowledge through experiential learning about the environment to change their trajectory in a positive direction. After eight years and reaching over 20,000 metro Boston students Change is Simple is poised to refine and grow their program to impact schools and communities across the country.

Methodology

This program evaluation utilized a mixed method research design integrating qualitative and quantitative data collection and analysis. The quantitative data collection included 503 pre and 74 post surveys of Change is Simple student program participants. The qualitative data collection included interviews with 4 school administrators, 12 teachers, and 36 students. As well as, classroom observations of 265 students in 20 classrooms in 4 school districts during Change is Simple lessons. By collecting and analyzing multiple forms of data the research measured organizational impacts. The quantitative design elements ensure validity and reliability of the research findings, while the qualitative design elements gave program evaluation participants voice by bringing to life their point of view and experience with the Change is Simple program.

Findings

The key findings of the program evaluation included the following:

Students environmental science content knowledge demonstrated robust growth as a result of participating in Change is Simple's lessons. The survey results demonstrated exponential growth in student content knowledge. Specifically, student knowledge demonstrated robust and statistically significant improvement on every survey question. On average, less than one percent of surveyed students provided the correct answer to the content knowledge questions prior to the Change is Simple intervention. In the post-intervention survey respondents answered the content knowledge questions correctly more than 85 percent of the time. This level of improvement across a broad range of content knowledge questions exemplifies the extent to which Change is Simple intervention dramatically improved student environmental science content knowledge.

Student motivation to learn about climate change, environmental sustainability, and STEAM significantly improved as a result of participating in Change is Simple's lessons. Administrators, and teachers consistently reported a dramatic increase in students' interest and motivation to learn about climate change, environmental sustainability and STEAM after Change is Simple's lessons. Teachers spoke about students on-going motivation to learn about these topics throughout the school year as a direct result of the Change is Simple program. The quantitative data supports the qualitative findings for improved student motivation as a result of participating in Change is Simple interventions. Student survey results rated their post-intervention motivation higher on seven of nine measures. The combination of qualitative and quantitative findings demonstrated the success of the Change is Simple program to significantly improve student motivation.

Students demonstrated unparalleled engagement during their participation in Change is Simple's lessons. Change is Simple lessons led to an unprecedented level of student engagement across demographics. During observed lessons of 265 students there was above a 90 percent engagement rate across all classrooms. Teachers consistently reported significantly higher levels of engagement for all students than in the typical classroom, but of particular note were the improved engagements among students with disabilities and English Language Learners.

Students take action to improve the environment as a result of participating in Change is Simple's lessons. Change is Simple had a consistent, measurable impact on student environmental actions. According to the pre and post-survey results, Change is Simple lessons inspired students to improve their self-reported environmental activities including recycling, saving water, picking up trash, saving electricity, and donating clothes and toys.

Students share their knowledge of environmental science content with their families and community. Administrators, teachers, and students reported continual sharing of environmental science knowledge gained through Change is Simple with their families and communities. The quantitative data supports the qualitative findings for improved student motivation as a result of participating in Change is Simple lessons. According to the pre and post intervention survey data, students rated their post-intervention motivation higher on seven of nine survey measures.

Students improve their understanding of math, literacy, and STEAM skills through participation in Change is Simple's cross-curricular lessons. The qualitative findings indicated that students improve their understanding of math, literacy, and STEAM skills through Change is Simple lessons. Teachers reported students gaining greater confidence and skill fluency through the reinforcement of the Change is Simple lessons. Teachers also reported using Change is Simple lessons as an anchor for future classroom content. Students spoke to their greater understanding of concepts and content after participating in the Change is Simple lessons.

Change is Simple has developed a mission, vision, and work culture that is the foundation for the organization's long-term success. All Change is Simple stakeholders viewed themselves as valued assets to the organization. All stakeholders were deeply committed to and took pride in their work at Change is Simple. Stakeholders universally reported a positive work climate and culture and felt they had opportunities for growth, advancement, leadership and collaboration. The stakeholders also felt their work aligned with the organization's mission and vision and were committed to ensuring it was achieved.

Administrators and Teachers indicated Change is Simple programming is among the best they have ever witnessed. Administrators and teachers universally viewed Change is Simple programming as exceptional. The developmentally appropriate, experiential nature of the lessons along with student focused educators delivering the lessons were consistently acknowledged across classrooms and schools. Administrators consistently reported the Change is Simple program was far better than any other program they had seen come into the school.

Recommendations

The program evaluation findings clearly indicate Change is Simple has produced a program that engages students, motivates students and teachers, and improves student climate change, environmental sustainability, and STEAM content knowledge. While Change is Simple's program was universally applauded, we recommend a series of strategies to strengthen Change is Simple's program portfolio, expand the program footprint, and improve the financial position of the organization. The key recommendations include the following:

Capitalize on Change is Simple's unique product that brings together STEAM, climate change and experiential education and a college mentoring program. For future funding it is important to explore opportunities that allow Change is Simple to highlight the unique combination of elements in its program. For example, mentoring college students to educate elementary students in STEAM through experiential education.

Further, the curricular program Change is Simple offers is relevant and desirable to school districts across demographics. The ability to impact and engage students of all socioeconomic status and academic ability should be a key component of Change is Simple marketing.

Hire a program director to work directly in the schools and a professional development director to expand programming. Hiring a program director would strengthen the relationship with the school systems and allow Patrick and Lauren to focus on organizational development, expansion, and fundraising. Hiring a professional development director to initiate the development of a professional development program would allow the organization to expand beyond the Boston suburbs.

Diversifying the organizational funding streams through pursuit of large grants, expansion into professional development, and the sale of curriculum materials. By focusing on large grants such as the National Science Foundation or the Institute of Education Sciences the organization would shift financial dependency away from school/district-based resources.

Create a K-12 Mentoring Program. In order to create on going opportunities for students to engage in climate education, we recommend the creation of a mentoring program. Middle and high school students who have graduated from the Change is Simple program or are independently interested in climate education could be paired with small groups of elementary students. The goal of the mentorship would be to extend climate education across grade levels, deepen students STEAM education, and lead to increased community commitment and action to improve the environment.

Extend Classroom Challenges. Classroom challenges were universally discussed as a critical component of continuing students thinking about and action toward improving the environment. We recommend extending these challenges to include a variety of different challenges classrooms can compete in each week or month. The goal of the extended challenges is to create opportunities and motivation for increased environmental action in students' schools and communities.

Offer community events focused on environmental education and action to provide an opportunity to reinforce students' learning, knowledge, and motivation for community members to partner with students in environmental action. Community events would provide an opportunity for students to showcase what they achieved through the challenges and other community orientated actions such as the banning of plastic bags. Offering an event for the wider community would also increase support for Change is Simple programming and position the organization as an essential component of students' school experience.

Expand to a professional development model utilizing both an environmental coach model and a Teacher-led model. Change is Simple could look to expand beyond direct service to incorporate professional development models, continue to build connections between the program and science standards, and build connections between the school lessons and community action. The environmental coach model requires recruiting and training college students to teach in public school classrooms. The teacher led professional development model would directly recruit and train teachers to teach the Change is Simple curriculum. Additional research is required to identify proven professional development models and the financial sustainability of such models.

Introduction

Program Description

Change is Simple partners with public schools in Massachusetts to provide an experiential STEAM program for 6,800 students annually. Differing from traditional environmental education, Change is Simple shifts the paradigm from a nature driven perspective to one centering on children's lives and the systems and products they use every day; specifically, how the choices people make influence the natural world around us. Their exciting hands-on lessons integrate directly into public school classrooms covering topics from ecosystems to renewable energy to engineering. Topics build off one another, culminating in four years of education that touches upon nearly every facet of environmental science.

Change is Simple strives to inspire elementary students to adopt lifelong environmental and social responsibility through a comprehensive environmental science and sustainability curriculum. The Change is Simple education model transforms classrooms into construction zones and ecosystems, and students into engineers and scientists. The organization integrates relevant science and sustainability into classrooms, enabling students to apply math, English, and social studies to address critical world issues. The mission of Change is Simple is to instill lifelong social and environmental responsibility through experiential learning that inspires action for healthy people, planet and community.

In order to fulfill their mission, Change is Simple delivers an experiential curricular program for students, across school contexts, in incubator schools in metro Boston and is aligned with Massachusetts Curriculum Standards. Change is Simple's logic model is grounded in the understanding that students in grades 3 through 8 are at a particular age where they are most able to learn skills and knowledge through experiential learning about the environment to change their trajectory in a positive direction. After eight years and reaching over 20,000 metro Boston students Change is Simple is poised to refine and grow their program to impact schools and communities across the country.

Evaluation Goals

The purpose of this program evaluation was to measure Change is Simple's impact on students, families and communities relative to their mission. Specifically, the program evaluation measured the organization's short, medium, and long-term impacts and outcomes.

The study results focused on four goals. First, the program evaluation study results can be used to refine, improve and expand Change is Simple's direct service programming. Second, the study results can be used to prioritize staff and financial resources to ensure efficient resource allocation. Third, the study results can be used in applying for foundation and business grants. Finally, the study results can inform strategic planning for a possible expansion to teacher professional development services.

Stakeholders

Table 1. identifies the program evaluation stakeholders. Identifying program stakeholders represents a critical element of the evaluation process as each partner plays a specific role in the evaluation. First, Change is Simple founders, Board members, staff and educators serve as partners in the program evaluation process working with the evaluators to accurately identify the purpose of the program evaluation and ensure its accuracy and alignment with organizational goals. Second, school principals, teachers, staff, and students represent key program evaluation participants. Much of the data collection efforts involved surveying, interviewing, and observing these participants to identify the impacts of Change is Simple’s work. Third, Sara and William Ewell serve as the external reviewers who aim to provide a scientifically rigorous and objective assessment of Change is Simple’s impact and ability to achieve their organizational mission and vision. The external reviewers worked collaboratively with Patrick and Lauren Belmonte and the Change is Simple Board of Directors throughout the evaluation process to achieve a comprehensive, accurate, and valuable program evaluation.

Table 1. Stakeholders Names, Categories, and Role in the Program Evaluation

Stakeholder Name	Stakeholder Category	Role in the Program Evaluation
Patrick and Lauren Belmonte	Founders and Staff	Participatory evaluation partner, coordinate site access, receive evaluation results
Change is Simple Board Members	Board members	Participatory evaluation partner, receive evaluation results
Change is Simple Staff and Educators	Staff	Participatory evaluation partner, evaluation participant
School principals	Program participants	Evaluation participant
School teachers	Program participants	Evaluation participant
School students	Program participants	Evaluation participant
Sara and William Ewell	Evaluators	External Reviewers

Logic Model

A logic model is a graphical depiction that presents shared relationships among the inputs (resources), outputs (products, services), and the impacts of Change is Simple’s program. A logic model clarifies the boundary between what a program is doing and the changes that result from those activities. The following section details Change is Simple’s inputs, outputs, and impacts to clearly identify the organization’s theory of change.

Inputs- Human Resources

The inputs represent the resources available to support the organization including staff, funding, and resources. Change is Simple available resources fall into three general categories: human capital, financial resources, and physical resources. Undoubtedly, human capital represents the organization's most valuable resource. Founders and senior staff Patrick and Lauren Belmonte represent the leadership, passion, and vision that transformed the idea of environmental education into a reality in more than 30 Boston area school systems. The founders have developed a talented and dedicated Board of Directors to guide the organization on programming, organizational structure, and financial decisions. Patrick and Lauren have also hired and trained a talented and dedicated staff including educators that assist in the development of the curriculum and materials and teach lessons.

Human capital resources extend beyond the confines of the Change is Simple organization to partnership institutions. These partnerships represent an invaluable resource to the organization's success and its ability to accomplish its mission and achieve its intended impacts. First, Change is Simple has partnered with principals, staff and teachers, parents, and students at more than 30 Massachusetts school systems. The organizational mission and business model depend on these partnerships to sustain the program. Second, Change is Simple has partnered with businesses and nonprofits to fund and advance their work. Third, Change is Simple has partnered with grantmaking institutions to build their financial resources.

Financial Resources

Change is Simple is funded by private donors and public schools.

Physical resources

Change is Simple's physical resources include their home offices, technology, curriculum materials, and Sustainability and Climate Innovation Learning Lab.

Outputs

Change is Simple's organizational activities include (1) building partnerships with area schools to gain access to school classes; (2) creating a curriculum and curriculum materials; (3) recruiting and training teachers; and (4) teaching environmental lessons in school classrooms four times annually in Grades 2-6. The key unit of service delivery is the number of classrooms and students that complete the Change is Simple curriculum.

Impacts

Impacts represent the program's intended outcomes as a result of the inputs and outputs. This program evaluation separates impacts into short, medium, and long term based on the time frame that it takes for Change is Simple to achieve these results. Table 2 describes the short, medium- and long-term program evaluation impacts and outcomes. Short-term impacts include those that Change is Simple seeks to achieve in the students they currently work with. This program evaluation focused primarily on measuring Change is Simple's short-term impacts. Medium term impacts refer to outcomes Change is Simple seeks to achieve in the larger community as a result

of their programmatic work with students. This program evaluation collected some information on medium term impacts; however, such impacts typically require multi-year data collection to measure with accuracy and access to alumni of the program. Long term impacts refer to those outcomes that take a multi-year effort to measure. This one-year study will collect some information on long term impacts; however, such impacts typically require multi-year data collection to measure with accuracy.

Table 2. Evaluation Impacts and Outcomes

Evaluation Impacts and Outcomes
SHORT TERM IMPACTS
Impact 1: Students will learn environmental science content as a result of participating in Change is Simple's lessons.
Impact 2: Students will be motivated to learn about climate change, environmental sustainability, and STEAM as a result of participating in Change is Simple's lessons.
Impact 3: Students will be engaged in their learning while participating in Change is Simple's lessons.
MEDIUM TERM IMPACTS
Impact 4: Students will take action to improve the environment as a result of participating in Change is Simple's lessons.
Impact 5: Students will share their knowledge of environmental science content with their families and/or community.
Impact 6: Students will improve their understanding of math, literacy and STEM skills through participation in Change is Simple's cross-curricular lessons.
LONG TERM IMPACTS
Impact 7: Students will adopt lifelong commitments to environmental stewardship through participation in Change is Simple's full multi-year curriculum.
Impact 8: Students will continue to participate in environmental stewardship activities through participation in Change is Simple's full multi-year curriculum.

Impact 9: Students will engage their family and community in environmental stewardship activities through participation in Change is Simple's full multi-year curriculum

OUTCOMES

Outcome 1: Change is Simple will have a more informed understanding of what teachers and administrators desire in a Change is Simple professional development program.

Outcome 2: Change is Simple will have a more informed understanding of what would motivate administrators and teachers to participate in a Change is Simple professional development program.

Logic Model Graph

Figure 1 graphically illustrates Change is Simple's theory of change in a logic model depicting the above described inputs, outputs, and short, medium, and long-term impacts.

INPUTS	OUTPUTS		IMPACTS		
	<i>Activities</i>	<i>Participation</i>	Short	Medium	Long
<p>Change is Simple educators time and skills</p> <p>Staff time and skills</p> <p>Board of Directors time and skills</p> <p>Collaboration with school district, principals, staff, and teachers,</p> <p>Volunteers</p> <p>Funding</p> <p>Technology</p> <p>Curriculum materials</p>	<p>Building partnerships with school systems to offer programming</p> <p>Create curriculum and curriculum materials</p> <p>Recruit and train educators to teach environmental curriculum</p> <p>Teach environmental lessons in school classrooms four times annually in Grades 3-6</p>	<p>Principals and school staff</p> <p>Teachers</p> <p>Students</p> <p>Alumni</p> <p>Business partners and funders</p> <p>Staff</p>	<p>Students will learn environmental science content</p> <p>Students will be motivated to learn about their environment and STEM</p> <p>Students will be engaged in their learning</p>	<p>Students will take action to improve their environment</p> <p>Students will share their knowledge of environmental science with their families and communities</p> <p>Students will improve their understanding of math, literacy and STEAM skills (outcome)</p>	<p>Students will adopt lifelong commitments to environmental stewardship</p> <p>Students will continue to participate in environmental stewardship activities</p> <p>Students will engage their family and community in environmental stewardship activities</p>

Assumptions

- School systems are willing to participate
- Funding is adequate to provide programming

External Factors

- Generosity of business and funding groups
 - School agendas and financial constraints
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Evaluation Methodology

The program evaluation utilized a mixed method research design integrating qualitative and quantitative data collection and analysis. By collecting and analyzing multiple forms of data the research measured organizational impacts. This program evaluation used a mixed method design to permit a more robust and complete data collection and analysis. The quantitative design elements ensure validity and reliability of the research findings, while the qualitative design elements gave program evaluation participants voice by bringing to life their point of view and experience with the Change is Simple program. The sections below describe each of the elements of the mixed method research design.

Research Questions

Research questions are developed to guide and focus mixed methods research. The following research questions correspond to the identified impacts and outcomes of the evaluation.

Question 1: How do Change is Simple's lessons impact students' environmental science content knowledge?

Question 2: How do Change is Simple's lessons impact students' motivation to learn about sustainability and environmental stewardship?

Question 3: How do Change is Simple's lessons impact the actions students take to improve the environment?

Question 4: How do Change is Simple's lessons impact student engagement during the lesson?

Question 5: How do Change is Simple's lessons impact students' motivation to learn STEM content?

Question 6: How do Change is Simple's lessons impact students to share the knowledge and skill gained with their families or community?

Question 7: How do students and teachers believe the Change is Simple programming supported student curricular understanding across content areas?

Question 8: What do teachers and administrators desire in the Change is Simple professional development program?

Question 9: What will motivate teachers and administrators to participate in Change is Simple professional development programming?

Data Collection Methods

This section describes how program evaluation data was collected. This description includes data collection methods used for each of the evaluation questions identified in the program evaluation research design. The program evaluation utilized three types of data collection methods including surveys, interviews, and observations. Table 3 details the data collection methods and data sources related to measuring each evaluation impact.

Table 3: Evaluation Impacts and Outcomes and Associated Data Collection Methods

Evaluation Impacts and Outcomes	Data Collection Method	Source of Data
SHORT TERM IMPACTS		
Impact 1: Students will learn environmental science content as a result of participating in Change is Simple's lessons.	Survey	Student Survey
	Interviews	Student, Teacher & Administrator Interviews
	Observations	Student Observations
Impact 2: Students will be motivated to learn about climate change, environmental sustainability, and STEAM as a result of participating in Change is Simple's lessons.	Survey	Student Survey
	Interviews	Student, Teacher and Student Interviews
	Observations	Student Observations
Impact 3: Students will be engaged in their learning while participating in Change is Simple's lessons.	Interviews	Student, Teacher & Administrator Interviews
	Observations	Student Observations
MEDIUM TERM IMPACTS		
Impact 4: Students will take action to improve the environment as a result of participating in Change is Simple's lessons.	Survey	Student Surveys
	Interviews	Student, Teacher & Administrator Interviews
	Observation	Student Observation
Impact 5: Students will share their knowledge of environmental science content with their families and/or community.	Survey	Student Survey
	Interviews	Student, Teacher & Administrator Interviews
	Observations	Student Observations
	Survey	Student survey

Impact 6: Students will improve their understanding of math, literacy and STEM skills through participation in Change is Simple's cross-curricular lessons.	Interviews	Student, Teacher Interviews & Administrator
LONG TERM IMPACTS		
Impact 7: Students will adopt lifelong commitments to environmental stewardship through participation in Change is Simple's full multi-year curriculum.	Interviews	Student, Teacher & Administrator Interviews
	Survey	Alumni survey (longitudinal study)
	Survey	Multi-year student surveys (longitudinal study)
Impact 8: Students will continue to participate in environmental stewardship activities through participation in Change is Simple's full multi-year curriculum.	Survey	Student Survey
	Interviews	Student, Teacher & Administrator Interviews
	Survey	Multi-year student surveys (longitudinal study)
Impact 9: Students will engage their family and community in environmental stewardship activities through participation in Change is Simple's full multi-year curriculum	Survey	Student Survey
	Interviews	Student, Teacher & Administrator Interviews
	Survey	Multi-year student surveys (longitudinal study)
OUTCOMES		
Outcome 1: Change is Simple will have a more informed understanding of what teachers and administrators desire in a Change is Simple professional development program.	Interviews	Teacher & Administrator Interviews
Outcome 2: Change is Simple will have a more informed understanding of what would motivate administrators and teachers to	Interviews	Teacher & Administrator Interviews

participate in a Change is Simple professional development program.		
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Quantitative Research

The quantitative data collection and analysis involved student surveys. The study utilized a pretest – posttest comparison group design. Pure experimental designs are the gold standard of research because they maximize validity and reliability by randomly assigning subjects to groups. In an educational setting, students are not randomly assigned classrooms and therefore the possibility of confounding variables exists. To properly isolate the program impacts and minimize confounding variables the design utilized pre-test and post-test survey design.

The statistical analysis measured the extent to which the Change is Simple interventions had a statistically significant impact on the intervention group behavior and learning. Quantitative analysis is based on the cornerstone concepts of reliability and validity. Reliability refers to the need for scientific results to be repeatable. In other words, researchers conducting the same test with the same sample should produce the same results. Validity refers to scientific effort to determine whether research measures what it intended to measure and approximate the truthfulness of the results. Internal validity refers to the confidence a researcher has in the cause and effect relationship. External validity refers to the process of determining whether other variables can explain your findings and whether those findings are generalizable from the sample group to your entire population.

This program evaluation utilized a pre-test post-test design to resolve if the intervention had a significant effect. The pre-test and post-test design increased the scientific validity of the results. Research designs utilizing only a post-test increase the risk of assignment bias or potential differences between the individual characteristics of the sample group in each classroom. The pre-test and post-test design increased validity by comparing each group to that students' own results prior to the intervention.

Surveys

Surveys were used to collect quantitative information from a sample of program participants. The primary goal of sampling is to achieve a representative sample from a total population of program participants. The purpose of the representative sample is to produce an accurate generalization about the total participant population.

Quantitative research typically uses probability sampling, based on mathematical probabilities to increase statistical power and accuracy. This program evaluation utilized a non-probability sampling technique, namely purposive sampling. Purposive sampling is an acceptable kind of sampling for special situations. It uses the judgment of an expert in selecting cases or selecting cases with a specific purpose in mind. Purpose sampling is typically used to measure a difficult

to reach population. Purposeful sampling was used in order to ensure a pool of participants that were representative of the diverse schools and communities Change is Simple partners with. The study included four elementary schools in four Massachusetts school districts. The four districts selected represent varied socioeconomic, racial and ethnic demographics.

COVID-19 related school closings limited the post-intervention survey data collection. Online surveys were collected from two schools, but were limited to 74 respondents. While this sample size is sufficient for aggregate statistical analysis, it limited the ability to break down the data by school, grade, and socio-economic characteristics. Low sample size statistical analysis tests were used to ensure the integrity of the findings.

Qualitative Research

Qualitative interview and observation data were collected from administrators, teachers, and students. Qualitative data allows for thick description of personal circumstances and beliefs to be uncovered in order to understand participants' comprehension, motivation, and lived experiences. Interviews were conducted with administrators at four participating Change is Simple schools and with teachers and students in the participating classrooms at these schools. Observations were conducted in participating classrooms at the four schools during Change is Simple lessons. Collecting data from multiple sources and tools allows for a diverse range of perspectives to inform the program evaluation.

Direct observations were conducted using field notes and an adapted Behavioral Engagement Related to Instruction (BERI) tool. The field notes served to capture all aspects of the environment and participants. They note how the environment was set up, activities that took place, surprising moments, and direct participant quotes. The observation guide allowed for organized data to be collected on the timeline of activities and student engagement.

Interviews

Interviews were conducted using a semi-structured approach with open-ended questions. These included an interview protocol that was adapted and expanded during the interviews. This strategy allowed for the participants' voice and stories to be the focal point of the interviews. An administrator at each of the four participating schools was interviewed in their office or other chosen location in the school building. Three teachers were interviewed during the Change is Simple lesson at each of the four participating schools. Students were interviewed in their classrooms during the Change is Simple lessons. No identifying information was gathered during the interviews. The interview questions were asked of students individually and in small groups as they worked on the hands-on component of the lesson.

Observation

The adapted BERI tool served as the framework grounded in the literature for capturing quantitative observation data on student engagement in twenty-two participating classrooms across four schools with a total of 260 students. The tool allowed for data to be collected in two-minute increments while cycling through observation of ten students each time. Each student was observed for approximately ten seconds to determine if they were engaged or disengaged using the behaviors identified in the BERI tool. A cycle was completed in approximately one minute after ten students were observed and a total score was noted. Individual engagement was not noted, rather a total score for each cycle. For example, 7/10 E. This indicated seven out of ten students were engaged.

Observations also included copious field notes. The field notes served to capture all aspects of the environment and participants. They noted how the environment was set up, activities that took place, surprising moments and direct participant quotes. The observation guide allowed for organized data to be collected on the timeline of activities and student engagement.

Findings

Overall Impressions of Change is Simple

Change is Simple's stakeholders spoke with great excitement about the work across the organization. Change is Simple staff members felt the organization was "a well-oiled" machine where everyone understands their roles. The Change is Simple staff felt Patrick and Lauren have created a positive work culture and love coming to work. They felt they have opportunities for growth and development and that their voices are valued when making organizational and programmatic decisions.

During school visits, the excitement among administrators, teachers and students about "Change is Simple days" could be felt throughout the school building. As students entered the schools and saw the Change is Simple educators, they would high five one another, often cheering, and asking the educators what time they would be coming to their classrooms. The school administrators would greet the Change is Simple staff letting them know how much the school community was looking forward to having them. Teachers shared stories of how kids would ask "every five minutes when it was Change is Simple time". The energy in the school building among stakeholders was palpable in every school, in every district visited.

Teachers and administrators universally shared, "We love Change is Simple." The experiential, developmentally appropriate curriculum Change is Simple brings to the classroom was recognized and appreciated. As one teacher stated, "I've been in the classroom for 35 years, I've seen a lot come through, but Change is Simple is the best I've seen at engaging kids and really teaching them."

Administrators universally spoke about the "whole package" Change is Simple brings to the school. They were referring to the ability to bring "critical STEM content", "connected to the curriculum", "create developmentally appropriate lessons", "bring amazing young educators" and "challenge kids to problem solve, critically think and to innovate." The administrators said outside programs generally offer one of these components but Change is Simple offers them all and it is why Change is Simple is so effective.

Administrators also talked about how teacher buy-in is usually one of the biggest challenges in bringing in outside programming. They often feel a tension between, "convincing central office it is worth the money and our teachers it is worth their time." However, they all spoke to the stark contrast of other programs to Change is Simple. One principal shared, "They [Change is Simple] brings a vibrancy and authenticity that everyone in our school looks forward to." One principal enthusiastically shared, "Change is Simple is so respectful, fun, and the kids connect. They deliver the goods in a way I've never seen another outside program do. They get kids and they get schools. These guys, holy cow, they deliver."

The following section discusses the analysis of each short and medium-term impact to adjudicate whether evidence supports that Change is Simple has achieved the intended impact. Qualitative and quantitative data are analyzed as applicable.

Short Term Impacts

Impact 1: Students will learn environmental science content as a result of participating in Change is Simple's lessons.

Change is Simple lessons start with students being asked to recall knowledge they learned in previous lessons or years. In one lesson, students were able to define words such as, “unlimited resource, limited resource, natural resource, renewable energy and carbon footprint.” During follow up discussions a majority of students raised their hands and shared pieces of content learned from previous lessons and/or year(s). This level of content recall was observed across classrooms and schools.

Students were able to share previously learned Change is Simple content during conversations throughout the lessons. They shared various pieces of information they learned such as, “how plastic ends up in the ocean”, “why species become endangered”, “how to help the environment”, “why it is important to pick up trash”, and “why wind turbines lead to cleaner air”. Students took pride in demonstrating the knowledge they had gained.

One group of students was eager to discuss the potential of wind turbines. They spoke about the significance of wind because “it doesn't create pollution” and is “a renewable resource”. They then recounted how after Change is Simple left the previous year their class had spent time brainstorming how they might be able to bring wind energy to their community.

A third-grade student made clear connections between the paper they were using in class and the environment, “We have to stop cutting down trees and hurting animals. I'm not going to cut down trees or do things that make other people cut down trees. I don't need so much paper.”

It was clear through the questions asked and answered, and the level of engagement and conversation that the students understood the Change is Simple lessons. Despite the presentation of complex topics, the students felt confident in their understanding of the material because of the developmentally appropriate, experiential approach.

These qualitative findings were supported by the quantitative data. Prior to the first Change is Simple lesson of the academic year, participating students filled out the survey to identify their environmental science content knowledge. Following the final Change is Simple lesson of the academic year students filled out a second survey to identify the change in their environmental science content knowledge. The pre and post-intervention survey data were statistically analyzed to determine if there was any improvement in student environmental science content knowledge due to the Change is Simple intervention.

Table 4 displays the quantitative findings from the pre and post-intervention survey. Collectively, students scored higher on every single measure in the post-intervention survey meaning the evidence indicates student's environmental science knowledge improved as a result

of the intervention. The key program evaluation question is whether the post-intervention survey data are statistically significantly improved from the pre-intervention data? In order to determine whether Change is Simple intervention resulted in an improvement in student environmental knowledge, it is necessary for the pre and post-intervention survey data to be statistically significantly different. The Pearson Chi-square test compares observed versus expected frequencies. The larger the difference between the observed and expected data the more likely that what was observed is not due to chance. Statisticians use the general rule that if there is a five percent (.05) or lower probability that the difference is due to random chance, then the result is considered statistically significant. In other words, we can find that there is a statistically significant difference between the pre and post-intervention survey data if the p-value is .05 or lower.

Table 4 includes an example survey question, the pre and post-intervention means for each question, and the p-value of both the Pearson Chi-square and the Fisher Exact Test. The Pearson Chi-square test found statistical significance for every single measure of student content knowledge. However, due to the relatively small sample size it is appropriate to also test the relationships using the Fisher's exact test. The Fisher's Exact Test is also used to examine the significance of the relationship between categorical data, particularly for small sample sizes. The second statistic of the final column of Table 4 represents the Fisher's exact test which similar to the Pearson Chi-square test uses a .05 percent or lower p-value to determine statistical significance. Table 4 illustrates that all the survey questions also demonstrate strong statistical significance using the more conservative Fisher's Exact Test.

Table 4 illustrates that the Change is Simple intervention resulted in statistically significant improvements in student environmental science knowledge. The results also indicate robust improvements in student content knowledge. On average, less than one percent of surveyed students provided the correct answer to the content knowledge questions prior to the Change is Simple intervention. In the post-intervention survey respondents answered the content knowledge questions correctly more than 85 percent. For example, the first row of table 4 asks the question "Where is electricity produced?". The pre-intervention mean for that answer was .00 meaning that no students answered the question correctly. The post intervention mean was .84 with a .04 standard deviation meaning that approximately 84 percent of students answered this question correctly. This level of improvement across a broad range of content knowledge questions exemplifies the extent to which Change is Simple intervention dramatically improved student environmental science content knowledge.

Table 4. How do Change is Simple's lessons impact students' environmental science content knowledge?

Example Survey Questions	Pre-intervention Mean	Post-intervention Median	Pearson Chi ² /Fisher Exact Test
Where is electricity produced?	.00 (.00)	.84 (.04)	.00
What is renewable energy?	.00 (.00)	.84 (.04)	.00

What is used to create plastic toys?	.01 (.01)	.93 (.29)	.00 .00
What happens to our trash?	.01 (.00)	.82 (.05)	.00 .00
Name 3 fossil fuels.	.01 (.01)	.78 (.05)	.00 .00
What actions create air pollution	.00 (.00)	.92 (.03)	.00 .00
What actions create water pollution	.01 (.01)	.93 (.29)	.00 .00
How can you help the forest ecosystem?	.01 (.01)	.85 (.04)	.00 .00
How can you help the planet when buying food?	.01 (.00)	.84 (.04)	.00 .00
What can you do to lower your carbon footprint?	.00 (.00)	.81 (.05)	.00 .00
What can we do to protect natural resources	.00	.85 (.04)	.00 .00
What makes renewable energy better for our planet?	.00 (.00)	.81 (.05)	.00 .00
Total Average	.01	85.16	.00 .00
Observations	414	74	488

Impact 2: Students will be motivated to learn about climate change, environmental sustainability, and STEAM as a result of participating in Change is Simple’s lessons.

Students’ excitement about the Change is Simple content and a desire, “to learn more and do more” was heard and seen at every school. Students shared curiosity and enthusiasm about nearly every Change is Simple curricular topic including: “saving animals”, “saving the earth”, “using less electricity”, “reducing carbon footprints”, and “using less water.”

A student shared a story about her and her friends talking at recess about how they want to “help different animals live and survive so they don’t go extinct.” The girl smiled as she described the different types of animal games they had made up and how they keep going back to how to save the different animals. She giggled as she shared the group wanted to start by “saving the turtles.”

Students universally talked about how the topics were “so interesting” and “really wanting to know more about it.”

The quantitative data supports the qualitative findings for improved student motivation as a result of participating in Change is Simple interventions. The pre and post-intervention survey data quantified the impact of Change is Simple lessons on students’ motivation to learn about sustainability and environmental stewardship. Table 5 illustrates the quantitative data indicating

that students rated their post-intervention motivation higher on seven of nine measures. For example, statement four states “I plan to take care of the earth for my whole life”. The mean post-intervention score of 3.74 was higher than the pre-intervention score of 3.65. Again, to analyze whether this increase was statistically significant, we utilized a Pearson Chi-square test. The Pearson Chi-square statistic of .01 is well below the .05 threshold for statistical significance. The Fisher’s Exact Test also indicates a statistically significant improvement in student motivation to take care of the earth following Change is Simple interventions. As a result, we can conclude that the Change is Simple lesson intervention significantly improved student motivation to take care of the earth for their whole life.

Table 5. Question 2: How do Change is Simple’s lessons impact students’ motivation to learn about sustainability and environmental stewardship?

Activities	Pre-intervention Mean	Post-intervention Median	Pearson Chi2/ Fishers Test
I take action to improve the earth.	4.02 (.05)	3.09 (.18)	.00 .00
I tell my family and friends what I have learned in school.	2.30 (.08)	3.55 (.12)	.00 .00
I tell my family and friends about how they can save the environment.	2.65 (.09)	3.39 (.13)	.00 .00
I plan to take care of the earth for my whole life.	3.65 (.07)	3.74 (.11)	.01 .01
I do things with my family to take care of the earth.	3.38 (.07)	2.85 (.18)	.02 .04
I do things with my friends to take care of the earth.	3.35 (.07)	3.57 (.11)	.00 .00
I want to do something that impacts my community.	3.66 (.07)	4.08 (.10)	.00 .00
I think all students should learn about climate change and how to keep the earth clean.	3.54 (.07)	4.28 (.10)	.00 .00
I feel like I have the power to make an impact to keep the environment clean.	2.65 (.09)	3.82 (.13)	.00 .00
Observations	414	74	488

Impact 3: Students will be engaged in their learning while participating in Change is Simple’s lessons.

Teachers and administrators across schools spoke about the high level of student engagement during Change is Simple lessons. A principal stated, “The Change is Simple educators understand how to teach and create developmentally appropriate lessons. They are engaging and unique and the students feel good about what they are learning and want to continue learning.”

Teachers and administrators consistently talked about the lessons being developmentally appropriate and “on their level”. They felt students were able to experience success and the content was delivered in ways that aligned with student interests and abilities. Students were more engaged in the Change is Simple lessons than during the regular school day because “they allow them to move around and do hands on activities.”

As one teacher watched a lesson she shared, “There are a high number of behavior challenges in this class, but not when Change is Simple is here. It is 45 minutes into the lesson today and they have been engaged the entire time. This never happens.” This was a sentiment that was shared in many classrooms.

The Change is Simple lessons have the ability to be inclusive of all students. One teacher shared, “Kids at all levels can participate. This is a full inclusion classroom right now and that is rare. Five of the kids in this room only come in for Change is Simple because we know they can be a part of it. They are usually in a separate special education classroom.” This unique opportunity for all students to participate in whole class and small group activities was observed across schools and classrooms.

The Observation Protocol confirmed the qualitative findings, clearly showing high levels of engagement across classrooms, schools and districts. All classrooms were above a ninety percent engagement rate for the twenty-minute observation. Thirty-two percent of classroom had a one hundred percent engagement rate during the observation. See Appendix A for engagement rates in each classroom.

Impact 4: Students will take action to improve the environment as a result of participating in Change is Simple’s lessons.

Students and teachers reported, “actions that are definitely a result of Change is Simple” that “stick” over time. Students “understand the lessons and want to do something about it. ‘Save the Earth’ actually means something to them. It isn’t just something to say anymore. Now the kids are talking about why it is important and what they can do.”

The most common actions were picking up trash and recycling. One teacher posited it was because, “these actions are in their control. They are changes they can make without an adult supporting it.” Students repeatedly shared that they “picked up trash all the time.” In Change is Simple classrooms teachers reported that students consistently recycled and held each other accountable. One teacher shared, “They recycle everything they can in the classroom now. It is just a part of the everyday expectations. This is a big change from before Change is Simple started two years ago.”

Students also consistently brought reusable water bottles and lunch containers in part because of Change is Simple lessons. One teacher shared, “Kids bring these lessons home and tell their parents why it is important to have reusable stuff for lunch.” During observations students had reusable water bottles displayed on their desks or under their seats. One student said, “I used to just bring those water bottles you throw out last year. Then I got it [why reusable water bottles are important] and now I always have one.”

One of the most impactful actions students took was to write to their town mayors about banning single use plastic bags. The students were challenged by Change is Simple to take this action and with support of their school's writing curriculum wrote and sent letters to town officials. The town voted them out. "For the kids to see the change they could make in their town was powerful, it was nothing like they'd done before."

Students at one school wrote persuasive essays to their principals about the need to protect turtles and their eggs in a pond behind the school. The students used content they learned in Change is Simple lessons to convince the principal to take action on the issue. Ultimately, the school installed a sign so people know how to protect them.

In reflecting on why students make change based on Change is Simple lessons one teacher stated, "The idea that small change can make a big different is really powerful for kids. They think I can't change the school or world but to see they can change themselves. They are in charge of themselves."

Teachers all discussed the continued level of student engagement between Change is Simple visits. "Students talk about it all the time", and they see students changing behavior. The challenge was "a great hook to keep the conversation going". Every observed class wanted to share what they had done for the challenge. The students "want to beat the other classes and do the right thing."

Table 6 illustrates the impact of actions students take to improve the environment based on Change is Simple interventions. The pre and post-intervention survey specifically collected data on the impact of the Change is Simple intervention on student environmental actions. Students were asked the extent to which they participate in a series of environmental activities. These variables were measured using a five-point Likert scale from 1 for "never" participate in the action to 5 for "always" participate in the action. The purpose of the survey questions were to quantify the improvement in student environmental actions as a result of the Change is Simple intervention.

Table 6 results indicate Change is Simple had a consistent, measurable impact on student environmental actions. For example, the first question asks about the level of the student's recycling behavior. The pre-intervention mean equaled 3.52, equivalent to a "sometimes" participates in recycling activities compared to a post-intervention mean of 4.3 equivalent to a "often times" participates in recycling activities. According to both the Pearson Chi-square and Fisher's test the post-intervention improvement were statistically significant. The Change is Simple intervention robustly and statistically significantly improved all self-reported environmental activities save composting and using reusable containers. Composting and using reusable containers both measured higher in the post intervention survey, however, neither was statistically significantly higher. The lack of statistical significance may be caused by the need for longer term interventions due to the higher cost of these activities. Composting and using reusable containers represent environmental activities that require both additional time and monetary costs. A multiyear analysis may determine if these higher cost environmental activities require longer term interventions to alter student behavior.

Table 6. How do Change is Simple’s lessons impact the actions students take to improve the environment?

Activities	Pre-intervention Mean	Post-intervention Median	Pearson Chi²/Fishers Test
I recycle.	3.52 (.07)	4.30 (.09)	.00 .00
I save water at home.	3.52 (.07)	3.77 (.11)	.00 .00
I pick up trash.	3.29 (.07)	3.36 (.29)	.02 .02
I compost.	2.45 (.08)	2.54 (.16)	.16 .15
I save energy.	3.40 (.07)	3.68 (.11)	.00 .00
I use reusable water bottles.	3.51 (.08)	4.15 (.11)	.01 .00
I use reusable containers.	3.55 (.08)	3.84 (.14)	.07 .06
I donate clothes and toys.	3.23 (.08)	4.0 (.1.2)	.00 .00
I talk to my family about cleaning the earth.	2.30 (.08)	3.0 (.13)	.00 .00
I talk to my friends about cleaning the earth.	2.19 (.08)	2.74 (.14)	.00 .00
I take actions to clean the earth.	2.65 (.09)	3.68 (.12)	.00 .00
Observations	414	74	488

Impact 5: Students will share their knowledge of environmental science content with their families and/or community.

Administrators and teachers consistently felt Change is Simple’s work at their schools provides students the knowledge and skills to have “strong voices in their communities”. As noted above, Change is Simple supported students to write to their town council and ultimately forced the ban of plastic bags. This was a powerful moment for students, schools, families and the overall community to see the impact young people can have in changing the environmental trajectory for the future.

Students are also consistently shared the new knowledge learned through Change is Simple with their families. One student stated, “my mom never thought about turning off the water or the lights all the time or making sure she recycled or about wind power. I told her all of these things and now she does think about them.” Teachers also shared how their students wanted to “teach older generations to take care of where you live.” Students taught parents and grandparents

about a multitude of topics including endangered species, wind turbines, solar panels, the life cycle, and composting.

Impact 6: Students will improve their understanding of math, literacy and STEAM skills through participation in Change is Simple's cross-curricular lessons.

The Change is Simple lessons are grounded in the Massachusetts State Curriculum. These connections were observed during the lessons and recognized by administrators, teachers and students. All participants were invested in Change is Simple because they recognized how the lessons reinforced the content they were teaching/learning. Teachers and administrators acknowledged this differentiated Change is Simple from other programs that come to the school because you can “see the connections between Change is Simple and our curriculum.” These connections impacted kids, “overall abilities in STEAM skills.”

In one observed lesson students converted water measurements from milliliters to liters. The Change is Simple educator led the class in skip counting by 250 and then figured out how many milliliters are in a liter. The educator used a giant soda bottle to demonstrate what 2 liters looks like in everyday life. All students were actively engaged (Appendix A) during the lesson. The classroom teacher shared, “When we cover that [liters] in math they will remember how to convert when I reference back to this lesson. They always remember the material they learn during Change is Simple”.

Another teacher shared how relevant the Endangered Animals lesson was to their curriculum and that she would “refer back to it all year.” The teacher expressed gratitude for her students having a hands-on opportunity to learn content in a way “they really understand and will remember”. She felt confident her students would remember the lesson and knowledge they learned throughout the year.

Teachers and administrators also acknowledged the importance of introducing and reinforcing STEAM skills at a young age. One teacher stated, “It is so great for them to learn about science at a young age. I find in urban districts science gets ignored until middle school and then the kids are really behind. They don't have a basic science background. How are they ever going to compete in the STEM field when they are starting out so behind.” Teachers saw on-going growth in their students' knowledge, skills and confidence in relation to their STEAM skills over the course of the year and credited Change as Simple for bringing the content to their schools.

Administrators and teachers across districts acknowledged and appreciated the deep connections between the Change is Simple lessons and the mandated curriculum. It helped clarify concepts that had been previously taught and provided time to practice critical skills.

Outcomes

Outcomes 1 & 2: Change is Simple will have a more informed understanding of what teachers and administrators desire in a Change is Simple professional development program and what would motivate them to participate in it.

Teachers and administrators across school districts universally praised and recognized the Change is Simple curriculum and its alignment with state standards. One principal shared, “When I look at professional development for my teachers, I am looking for something that meets student needs in the most interesting, engaging way possible. This is what Change is Simple does. They use experiential learning, which we should all be gearing ourselves towards, to teach kids content that is directly related to our state standards.”

Teachers and administrators all spoke to the need for professional development that is easily implemented by teachers. There were a variety of ideas of how this could be accomplished but the clear message was that teachers should complete professional development and immediately be able to implement it in their classroom. Teachers and administrators also wanted for Change is Simple to offer professional development that “chunked out the material.” Several felt that offering an entire unit at once would be overwhelming and spoke to the need to “streamline and simplify.”

The challenge of materials was one component that came up in all interviews. It was clear that teachers felt overwhelmed at the possibility of creating, or buying materials for lessons and at the same time acknowledged the critical role they played in the success of the program. Several teachers said money was available to them to buy classroom materials and would like for Change is Simple to create “kits or a buy list with links”. Others said there was no money available to purchase materials and would want Change is Simple to model lessons with alternative materials that every school has available. Regardless of what was used for materials, teachers recommended creating video demonstrations. It would provide an opportunity to model using “simpler materials” and allow teachers to go back and review the lessons after in person professional development.

Recommendations

The program evaluation findings clearly indicate Change is Simple has produced a program that engages students, motivates students and teachers, and produces improves student climate change, environmental sustainability, and STEAM content knowledge. While Change is Simple's program was universally applauded, we recommend a series of short, medium, and long-term strategies to strengthen Change is Simple's program portfolio, expand the program footprint, and improve the financial position of the organization.

Short Term

Change is Simple produces a unique product that brings together STEAM, climate change and experiential education and a college mentoring program. All stakeholders at the organization and in schools are deeply committed to the organization's success. The curricular program Change is Simple offers is relevant and desirable to school districts across demographics. In order for Change is Simple to achieve its goals, it essential to focus on building organizational capacity while maintaining the integrity of the program offerings.

First, we recommend hiring a program director to work directly in the schools. This would strengthen the relationship with the school systems and allow Patrick and Lauren to focus on organizational development, expansion, and fundraising. Second, we recommend hiring a professional development director to initiate the development of a professional development program to expand beyond the Boston suburbs. Third, solicit existing board members and recruit future board members to assist in grant writing, fundraising, and partnership building. Developing additional funding streams will be critical to expanding both into new on ground school districts, virtual professional development programs, and fundraising.

We recommend that Change is Simple pursue diversifying its funding streams through pursuit of large grants, expansion into professional development, and the sale of curriculum materials. By focusing on large grants such as the National Science Foundation or the Institute of Education Sciences the organization would shift financial dependency away from school/district-based resources. By applying for a grant to serve on-ground students in the Boston School System, Change is Simple could appeal to funders seeking to fund college student mentorship, STEAM education, and building school and teacher capacity. Funders typically also seek a research component to measure the impact of program effectiveness.

Medium Term

The program evaluation found evidence of student environmental behavior changes as a result of participation in Change is Simple interventions. In order to expand student environmental impacts beyond the classroom and into the community, we recommend a menu of programmatic changes each of which would expand learning beyond the classroom and into the community.

K-12 Mentoring Program

In order to create on going opportunities for students to engage in climate education, we recommend the creation of a mentoring program. Middle and high school students who have graduated from the Change is Simple program or are independently interested in climate education could be paired with small groups of elementary students. The mentors could be

present for the Change is Simple lessons and create monthly projects to complete with the students in their classrooms. An online component of the mentorship could also be created for on-going communication and sharing of ideas. The goal of the mentorship would be to extend climate education across grade levels, deepen students STEAM education, and lead to increased community commitment and action to improve the environment.

Classroom Challenges

Classroom challenges were universally discussed as a critical component of continuing students thinking about and action toward improving the environment. We recommend extending these challenges to include a variety of different challenges classroom can compete in each week or month. For example, a website could be set up for each grade level with a list of weekly challenges. Each classroom that chooses to participate could track their progress, enter a final result and earn a Change is Simple. For example, they could track the total number of water bottles recycled. The challenges could be offered across Change is Simple districts and prizes awarded for achieving the highest level of recycling of all third grades across Metro Boston. This model could also be extended to include challenges for students to complete at home. The goal of the extended challenges is to create opportunities and motivation for increased environmental action in students' schools and communities.

Community Events

Change is Simple student participants were eager to share their learnings with their families and communities. We recommend offering community events focused on environmental education and action to provide an opportunity to reinforce students' learning, knowledge, and motivation for community members to partner with students in environmental action. Community events would provide an opportunity for students to showcase what they achieved through the challenges and other community orientated actions such as the banning of plastic bags. Offering an event for the wider community will also increase support for Change is Simple programming and position the organization as an essential component of students' school experience.

Long Term

We recommend Change is Simple expand to a professional development model utilizing both an environmental coach model and a Teacher-led model. The Action Civics education model, focused on expanding civic education and incorporating student led civics projects in the community tied to the school curriculum, represents an excellent model for Change is Simple. Action Civics nonprofits, such as Generation Citizen, Earth Force, and the Mikva Challenge, seek to inspire civic action through a proven school curriculum combined with community action civics projects and professional development programs. Similarly, Change is Simple could look to expand beyond direct service to incorporate professional development models, continue to build connections between the program and science standards, and build connections between the school lessons and community action.

Two proven professional development approaches include the coach model and the teacher-led model. The environmental coach model requires recruiting and training college students to teach in public school classrooms. This approach is similar to the model Change is Simple currently employees. Similar models have found success developing college clubs that focus on this issue in environmentally focused departments that can serve as the on-ground coach recruiters. This

model could be employed at university towns within driving distance of Boston including Providence, RI, Worcester MA, and the five-college area of western, MA to begin scaling programs while minimizing travel time.

The teacher led professional development model would directly recruit and train teachers to teach the Change is Simple curriculum. As Change is Simple markets their professional development program they need to differentiate between systems level and individual decision makers. Superintendents and principals make decisions on professional development to be offered across districts and need to first and foremost see the grounding of Change is Simple professional development in Common Core and Next Generation Science Standards. Administrators understand the importance of experiential learning and climate education but in order to secure financial support they must be able to demonstrate the clear connection of professional development to curricular standards.

Alternatively, teachers want professional development to create opportunities for them to offer experiential, highly engaging lessons they can easily implement in their classrooms. Teachers desire that the nuances of implementation are thought through in the professional development offered. Teachers are motivated to sign up for a professional development program they can implement in their classroom immediately. While the materials Change is Simple brings to schools are an essential component of the in-person program, they may in fact be something that turns off teachers in signing up for the professional development program. It is recommended that alternative, easy to create materials be used as the standard in the professional development program. A kit or links could be provided for districts and teachers who have funds to purchase the more elaborate materials but this should be viewed as an add on. In the short run, funding could be obtained to provide schools with materials with a long-term strategy of producing and selling materials to school districts.

Additional research is required to identify proven professional development models and the financial sustainability of such models.

Future Research

This section explores how future research could improve our understanding of the short, medium- and long-term impacts of Change is Simple programming. This program evaluation and future research efforts are intended to provide evidence of the program's effectiveness, data for additional funding support, and recommendations for program improvement and expansion.

Short Term Impacts

This program evaluation provided qualitative and quantitative evidence that the Change is Simple interventions improved student environmental science knowledge, motivation, and engagement. The data provides evidence that Change is Simple achieved the organization's intended short-term impacts through their school programming. The program evaluation post-intervention data collection limitations necessitate further research to reinforce these findings. The coronavirus pandemic limited post-intervention data collection to a sample size of 74 students. While this sample size was adequate to quantify the gains from the Change is Simple intervention, it was not large enough to breakout the results by school, grade or socio-economic characteristics.

Future research should expand the sample size both in terms of the number of participants, but also in terms of school diversity. An expanded study sample size would permit disaggregated analysis of the impact of Change is Simple interventions on subpopulations. The larger sample size would also confirm the robust results identified in this program evaluation.

Medium Term Impacts

The program evaluation provided preliminary evidence that Change is Simple is achieving medium-term goals including improving student environmental action and sharing that information with their community. Future research should expand upon these findings in several ways including analyzing whether the benefits of Change is Simple interventions increase, decrease or remain stable over time. A longitudinal survey would identify cumulative impacts of multi-year interventions.

Long Term Impacts

The program evaluation design did not specifically focus on long term impacts. The program evaluation found student participation in the Change is Simple program increased environmental actions. However, expanding the program evaluation to interview alumni would enable us to identify the long-term impacts of student environmental action. Data collection could include a combination of alumni quantitative survey and qualitative interviews.

Appendix A: Data Collection Summary Tables

This appendix provides an overview of the Change is Simple data collected between May 2019 and May 2020. This summary report includes pre and post-intervention data collected from (1) student observations, (2) student, teacher, and administrator interviews, and (3) student surveys. Table 7 summarizes data collected by category for each school system. In total, the Evaluation Institute collected observations from 20 classrooms totaling 265 students, interviewed 36 students, 12 teachers, and 4 principals, and collected student survey data from 503 students.

Appendix A: Data Collection Summary Tables

Table 7. School Systems Data Collection Summary

Data Collection Categories	Essex	Revere	Salem	Woburn	Total
Grades	3,4,5	3	3,4,5	3,4,5	3,4,5
Classrooms observed	5	3	5	5	20
Students observed	60	75	64	61	265
Students interviewed	9	9	9	9	36
Teachers interviewed	3	3	3	3	12
Administrators interviewed	1	1	1	1	4
Students pre-surveyed	102	86	184	131	503
Students post-surveyed	0	7	0	67	74

The purpose of the pre-intervention survey data was to determine a baseline for student feelings towards a broad range of school related issues, self-identified environmental behaviors, and knowledge in specific curricular areas to compare with the post-intervention survey data. Student surveys were collected from 503 students across four school districts. The survey instrument collected student data in three main categories including (1) student self-identified feelings toward school, school subjects such as science, specific curricular areas such as climate change, Change is Simple lessons, (2) self-identified environmental behavior, and (3) specific Change is Simple curriculum questions.

Student self-identified feeling towards school lessons questions utilized a five-point Likert scale with categories including strongly disagree, disagree, not sure, agree, and strongly agree. The survey data were coded into Microsoft Excel and then analyzed using a statistical software program. The answers were coded as follows: strongly disagree (1), disagree (2), not sure (3), agree (4), and strongly agree (5). The higher the median score the more positive students felt about a particular statement. Self-identified environmental behavior questions were also rated on a five-point Likert scale utilizing the following coding scheme: never (1), not often (2), sometimes (3), very often (4), and always (5). The higher the mean of student responses the more they self-identified as consistently engaging in that particular environmental behavior. The Change is Simple curriculum questions represented open ended questions. The questions were

coded 1 if the student answered correctly and 0 if the student did not answer correctly or did not answer the question at all.

Each table includes summary data on the mean, median, mode, and standard deviation. The mean represents the average of the data values. The median represents the middle value of all data values. The mode represents the value that occurs with greatest frequency. The standard deviation represents the level of variation of the data values. In other words, the higher the level of variation in student responses the higher the standard deviation, while a lower standard deviation illustrates a consistency or low variation in student responses.

Table 8. Essex 3rd Grade Endangered Animals Lesson Student Engagement Observations

Minutes	Number of Students	Number of Students Engaged	Percentage of Students Engaged
2	30	30	100
4	30	30	100
6	30	30	100
8	30	30	100
10	30	30	100
12	30	30	100
14	30	30	100
16	30	30	100
18	30	30	100
20	30	30	100
Total			100 percent

Note. This data included observations of two classrooms with 15 students in each.

Table 9. Essex 4th Grade Electricity Conservation Lesson Student Engagement Observations

Minutes	Number of Students	Number of Students Engaged	Percentage of Students Engaged
2	15	15	100
4	15	15	100
6	15	15	100
8	15	15	100
10	15	14	93
12	15	15	100
14	15	15	100
16	15	14	93
18	15	14	93
20	15	14	93
Total			97 percent

Table 10. Essex 5th Grade Water Conservation Lesson Student Engagement Observations

Minutes	Number of Students	Number of Students Engaged	Percentage of Students Engaged
2	15	15	100
4	15	15	100
6	15	15	100
8	15	15	100
10	15	15	100
12	15	13	86
14	15	15	100
16	15	15	100
18	15	15	100
20	15	15	100
Total			98 percent

Table 11. Salem 3rd Grade Ecosystems Lesson Student Engagement Observations

Minutes	Number of Students	Number of Students Engaged	Percentage of Students Engaged
2	20	20	100
4	20	20	100
6	20	20	100
8	20	20	100
10	20	20	100
12	20	20	100
14	20	20	100
16	20	20	100
18	20	20	100
20	20	20	100
Total			100 percent

Table 12. Salem 4th Grade Electricity Conservation Lesson Student Engagement Observations

Minutes	Number of Students	Number of Students Engaged	Percentage of Students Engaged
2	21	21	100
4	21	21	100
6	21	21	100
8	21	19	90
10	21	21	100

12	21	21	100
14	21	20	95
16	21	21	100
18	21	20	95
20	21	21	100
Total			98 percent

Table 13. Salem 5th Grade Water Conservation Lesson Student Engagement Observations

Minutes	Number of Students	Number of Students Engaged	Percentage of Students Engaged
2	23	23	100
4	23	20	87
6	23	20	87
8	23	20	87
10	23	20	87
12	23	21	91
14	23	22	95
16	23	20	87
18	23	23	100
20	23	22	95
Total			92

Table 14. Woburn 3rd Grade Ecosystems Lesson Student Engagement Observations

Minutes	Number of Students	Number of Students Engaged	Percentage of Students Engaged
2	19	19	100
4	19	19	100
6	19	19	100
8	19	19	100
10	19	19	100
12	19	19	100
14	19	19	100
16	19	19	100
18	19	19	100
20	19	19	100
Total			100 percent

Table 15. Woburn 4th Grade Electricity Conservation Lesson Student Engagement Observations

Minutes	Number of Students	Number of Students Engaged	Percentage of Students Engaged
2	23	23	100
4	23	23	100
6	23	23	100
8	23	23	100
10	23	23	100
12	23	23	100
14	23	23	100
16	23	23	100
18	23	23	100
20	23	23	100
Total			100 percent

Table 16. Woburn 5th Grade Water Conservation Lesson Student Engagement Observations

Woburn 5th Grade Minutes	Number of students	Number of Students Engaged	Percentage of Students Engaged
2	19	17	89
4	19	16	84
6	19	19	100
8	19	16	84
10	19	19	100
12	19	18	95
14	19	16	84
16	19	19	100
18	19	18	95
20	19	19	100
Total			93 percent

Appendix B: Pre-Intervention Student Survey Results

Appendix B includes the data tables for all schools and classrooms. Tables 17-20 summarize the survey data for Essex 3rd through 5th grade classrooms. The results indicate a high level of interest in Change is Simple lessons across all three grades. For example, the statement “I am excited about Change is Simple’s lessons” received a mean of 4.47 in 3rd grade, 3.91 in 4th grade, and 4.28 in 5th grade. These averages were among the highest rated in this section of questions and possessed the lowest level of variance. The self-identified environmental behaviors responses indicated high levels of environmental activities. For example, the mean response for recycling, saving water, saving energy, using reusable water bottles, and reusable containers were all above four, meaning that students claimed they participated in such activities “very often”. The curriculum questions consistently demonstrated that students did not know the answers to the questions about Change is Simple lessons. Given that students did not yet participate in the lesson, this is not a surprising finding. The low curriculum question scores do provide growth potential for the post-intervention surveys.

Tables 21-23 summarize the survey data for Salem 3rd through 5th grade classrooms. The results indicate a high level of interest in Change is Simple lessons across all three grades. Again, students provided an average score of 4.1 for the question “I am excited about Change is Simple’s lessons”. Student scores around their feelings toward schools were lower than Essex. The self-identified environmental behaviors responses indicated lower levels of environmental activities than Essex. The mean score for the majority of environmental behaviors was in the “sometimes” category. Again, the curriculum questions section consistently demonstrated that students did not know the answers to the questions about Change is Simple lessons.

Tables 24-26 summarize the survey data for Woburn 3rd through 5th grade classrooms. Woburn students demonstrated the highest level of enthusiasm for Change is Simple lessons with a mean score of 4.3 for the statement “I am excited about Change is Simple’s lessons”. The student self-identified environmental behaviors responses indicate lower levels of environmental activities than Essex students. The curriculum questions responses were similar to the other school systems with students demonstrating no knowledge of the Change is Simple curriculum material.

The survey data is most valuable in terms of identifying a baseline for students in comparison to the post-intervention survey data. The self-identified environmental behaviors demonstrate significant growth potential. This is significant given that self-identified data tends to skew high given that students want to paint themselves in the best light to the survey providers. The curriculum questions are not statistically different from zero meaning that any improvement will demonstrate the impact of Change is Simple curricular efforts. The pre-intervention student survey data provides a clear, comprehensive picture of Change is Simple student knowledge, feelings, and behavior to compare with the control groups and the post-intervention data.

Table 17. Essex 3rd Grade Pre-Intervention Student Survey Results

Reverse 3rd Grade	Mean	Median	Mode	Standard Deviation
I like school	3.60	4.00	4.00	1.08
I am excited about math at school	3.31	4.00	4.00	1.44
I am excited about reading at school	4.00	4.00	5.00	1.22
I am excited about science at school	4.65	5.00	5.00	0.85
I am excited to learn about climate change and how I can keep the earth clean	4.24	4.50	5.00	1.03
I am excited about Change is Simple's lessons	4.19	5.00	5.00	1.30
I take action to improve the earth	3.91	4.00	5.00	1.25
I want to take action to improve the earth	3.91	4.00	5.00	1.23
I am interested in my school lessons	3.75	4.00	4.00	1.15
I have used the information from my school lessons in my real life	3.55	4.00	5.00	1.32
I am excited to learn more about science	4.09	5.00	5.00	1.26
I tell my family and friends what I have learned in school	3.58	4.00	5.00	1.49
I tell my family and friends about how they can save the environment	3.17	3.00	4.00	1.41
It is important to take care of the earth for my whole life	3.50	4.00	5.00	1.66
I plan to take care of the earth for my whole life	3.00	3.00	1.00	1.66
I do things with my family to take care of the earth	2.43	2.00	1.00	1.49
I do things with my friends to take care of the earth	2.53	2.00	1.00	1.52
I want to do something that impacts my community	2.61	2.50	1.00	1.58
I think all students should learn about climate change and how to keep the earth clean	2.89	3.00	1.00	1.75
I feel like I have the power to make an impact to keep the environment clean	2.74	2.50	1.00	1.72
Self-Identified Environmental Behaviors				
I recycle	2.24	2.00	1.00	1.46
I save water at home	2.48	2.00	1.00	1.63
I pick up trash	2.22	1.50	1.00	1.52
I compost	1.83	1.00	1.00	1.34
I save energy	2.24	1.00	1.00	1.59
I use reusable water bottles	2.39	1.00	1.00	1.67
I use reusable containers	2.07	1.00	1.00	1.55
I donate clothes and toys	2.07	1.00	1.00	1.53
I talk to my family about cleaning the earth	1.74	1.00	1.00	1.27
I talk to my friends about cleaning the earth	1.59	1.00	1.00	1.11
I take actions to clean the earth	1.93	1.00	1.00	1.47

Curriculum Questions				
How much water is available for human use?	0.00	0.00	0.00	0.00
What is the impact of your food on the earth?	0.00	0.00	0.00	0.00
Where is electricity produced?	0.00	0.00	0.00	0.00
What is used to create plastic toys?	0.00	0.00	0.00	0.00
What happens to our trash?	0.00	0.00	0.00	0.00
What actions create air pollution?	0.00	0.00	0.00	0.00
What actions create water pollution?	0.00	0.00	0.00	0.00
How can you help the forest ecosystem?	0.00	0.00	0.00	0.00
How can you help the planet when buying food?	0.00	0.00	0.00	0.00
What can you do to lower your carbon footprint?	0.00	0.00	0.00	0.00
What can we do to protect natural resources?	0.00	0.00	0.00	0.00
What makes renewable energy better for our planet?	0.00	0.00	0.00	0.00

Table 18. Essex 4th Grade Pre-Intervention Student Survey Results

Essex 4th Grade	Mean	Median	Mode	Standard Deviation
I Like School	2.88	3.00	4.00	1.45
I am excited about math at school	2.70	3.00	1.00	1.47
I am excited about reading at school	4.30	5.00	5.00	1.19
I am excited about science at school	3.73	4.00	5.00	1.21
I am excited to learn about climate change and how I can keep the earth clean	3.73	4.00	5.00	1.40
I am excited about Change is Simple's lessons	3.91	4.00	5.00	1.26
I take action to improve the earth	4.15	4.00	5.00	1.06
I want to take action to improve the earth	4.18	4.00	5.00	1.01
I am interested in my school lessons	3.12	3.00	5.00	1.52
I have used the information from my school lessons in my real life	3.33	3.00	4.00	1.22
I am excited to learn more about science	3.61	4.00	4.00	1.27
I tell my family and friends what I have learned in school	3.30	4.00	4.00	1.47
I tell my family and friends about how they can save the environment	3.42	4.00	3.00	1.37
It is important to take care of the earth for my whole life	4.27	5.00	5.00	1.13
I plan to take care of the earth for my whole life	4.15	5.00	5.00	1.20
I do things with my family to take care of the earth	3.39	4.00	5.00	1.48
I do things with my friends to take care of the earth	3.24	3.00	3.00	1.41
I want to do something that impacts my community	3.73	4.00	5.00	1.33
I think all students should learn about climate change and how to keep the earth clean	3.85	4.00	5.00	1.28

I feel like I have the power to make an impact to keep the environment clean	3.67	4.00	5.00	1.47
Self-Identified Environmental Behaviors				
I recycle	3.82	4.00	4.00	1.10
I save water at home	3.55	3.00	3.00	1.06
I pick up trash	3.76	4.00	5.00	1.25
I compost	3.33	4.00	4.00	1.36
I save energy	3.64	4.00	5.00	1.27
I use reusable water bottles	4.27	5.00	5.00	1.07
I use reusable containers	4.30	5.00	5.00	0.88
I donate clothes and toys	3.42	3.00	5.00	1.37
I talk to my family about cleaning the earth	2.76	3.00	3.00	1.32
I talk to my friends about cleaning the earth	2.39	2.00	1.00	1.34
I take actions to clean the earth	3.27	3.00	3.00	1.40
Curriculum Questions				
What is electricity production?	0.00	0.00	0.00	0.00
What is renewable energy?	0.00	0.00	0.00	0.00
What are the gases called that get stuck in our atmosphere?	0.00	0.00	0.00	0.00
What is your carbon footprint?	0.00	0.00	0.00	0.00
Name 3 fossil fuels.	0.00	0.00	0.00	0.00
What actions create air pollution?	0.00	0.00	0.00	0.00
What actions create water pollution?	0.00	0.00	0.00	0.00
How can you help the forest ecosystem?	0.00	0.00	0.00	0.00
How can you help the planet when buying food?	0.00	0.00	0.00	0.00
What can you do to lower your carbon footprint?	0.00	0.00	0.00	0.00
What can we do to protect natural resources?	0.00	0.00	0.00	0.00
What makes renewable energy better for our planet?	0.00	0.00	0.00	0.00

Table 19. Essex 5th Grade Pre-Intervention Student Survey Results

Essex 5th Grade	Mean	Median	Mode	Standard Deviation
I Like School	3.51	4	4	1.12
I am excited about math at school	3	3	3	1.39
I am excited about reading at school	4.2	5	5	1.05
I am excited about science at school	3.79	4	5	1.08
I am excited to learn about climate change and how I can keep the earth clean	3.79	4	4	1.00
I am excited about Change is Simple's lessons	4.28	5	5	0.91
I take action to improve the earth	3.84	4	5	1.06
I want to take action to improve the earth	4.12	4	4	0.92
I am interested in my school lessons	3.58	4	4	1.18

I have used the information from my school lessons in my real life	3.69	4	4	1.23
I am excited to learn more about science	3.76	4	4	1.08
I tell my family and friends what I have learned in school	3.61	4	4	1.16
I tell my family and friends about how they can save the environment	3.56	4	3	1.18
It is important to take care of the earth for my whole life	4.43	5	5	0.71
I plan to take care of the earth for my whole life	4.15	4	5	0.81
I do things with my family to take care of the earth	3.48	3	3	1.04
I do things with my friends to take care of the earth	3.33	3	3	1.11
I want to do something that impacts my community	4	4	5	1.14
I think all students should learn about climate change and how to keep the earth clean	4.12	4	5	1.00
I feel like I have the power to make an impact to keep the environment clean	3.87	4	5	1.12
Self-Identified Environmental Actions				
I recycle	3.92	4	4	0.92
I save water at home	3.46	3	3	1.12
I pick up trash	3.61	3	3	1.06
I compost	3.48	3	3	1.25
I save energy	3.41	3	4	1.14
I use reusable water bottles	4.15	4	5	1.06
I use reusable containers	4.05	4	4	0.91
I donate clothes and toys	3.56	3	3	1.16
I do things with my friends to take care of the earth	2.79	3	2	1.38
I want to do something that impacts my community	2.46	2	2	1.25
I think all students should learn about climate change and how to keep the earth clean	3.179	3	3	1.04
Curriculum Questions				
Is water a limited or unlimited natural resource?	0	0	0	0
What can be done to create new soil?	0	0	0	0
How much water is available for human use?	0	0	0	0
What is the benefit of buying local food?	0	0	0	0
What is bioaccumulation?	0	0	0	0
What actions create air pollution?	0	0	0	0
What actions create water pollution?	0	0	0	0
How can you help the forest ecosystem?	0	0	0	0
How can you help the planet when buying food?	0	0	0	0
What can you do to lower your carbon footprint?	0	0	0	0
What can we do to protect natural resources?	0	0	0	0
What makes renewable energy better for our planet?	0	0	0	0

Table 20. Revere 3rd Grade Pre-Intervention Student Survey Results

Revere 3rd Grade	Mean	Median	Mode	Standard Deviation
I like school	3.60	4.00	4.00	1.08
I am excited about math at school	3.31	4.00	4.00	1.44
I am excited about reading at school	4.00	4.00	5.00	1.22
I am excited about science at school	4.65	5.00	5.00	0.85
I am excited to learn about climate change and how I can keep the earth clean	4.24	4.50	5.00	1.03
I am excited about Change is Simple's lessons	4.19	5.00	5.00	1.30
I take action to improve the earth	3.91	4.00	5.00	1.25
I want to take action to improve the earth	3.91	4.00	5.00	1.23
I am interested in my school lessons	3.75	4.00	4.00	1.15
I have used the information from my school lessons in my real life	3.55	4.00	5.00	1.32
I am excited to learn more about science	4.09	5.00	5.00	1.26
I tell my family and friends what I have learned in school	3.58	4.00	5.00	1.49
I tell my family and friends about how they can save the environment	3.17	3.00	4.00	1.41
It is important to take care of the earth for my whole life	3.50	4.00	5.00	1.66
I plan to take care of the earth for my whole life	3.00	3.00	1.00	1.66
I do things with my family to take care of the earth	2.43	2.00	1.00	1.49
I do things with my friends to take care of the earth	2.53	2.00	1.00	1.52
I want to do something that impacts my community	2.61	2.50	1.00	1.58
I think all students should learn about climate change and how to keep the earth clean	2.89	3.00	1.00	1.75
I feel like I have the power to make an impact to keep the environment clean	2.74	2.50	1.00	1.72
Self-Identified Environmental Behaviors				
I recycle	2.24	2.00	1.00	1.46
I save water at home	2.48	2.00	1.00	1.63
I pick up trash	2.22	1.50	1.00	1.52
I compost	1.83	1.00	1.00	1.34
I save energy	2.24	1.00	1.00	1.59
I use reusable water bottles	2.39	1.00	1.00	1.67
I use reusable containers	2.07	1.00	1.00	1.55
I donate clothes and toys	2.07	1.00	1.00	1.53
I talk to my family about cleaning the earth	1.74	1.00	1.00	1.27
I talk to my friends about cleaning the earth	1.59	1.00	1.00	1.11
I take actions to clean the earth	1.93	1.00	1.00	1.47
Curriculum Questions				
How much water is available for human use?	0.00	0.00	0.00	0.00

What is the impact of your food on the earth?	0.00	0.00	0.00	0.00
Where is electricity produced?	0.00	0.00	0.00	0.00
What is used to create plastic toys?	0.00	0.00	0.00	0.00
What happens to our trash?	0.00	0.00	0.00	0.00
What actions create air pollution?	0.00	0.00	0.00	0.00
What actions create water pollution?	0.00	0.00	0.00	0.00
How can you help the forest ecosystem?	0.00	0.00	0.00	0.00
How can you help the planet when buying food?	0.00	0.00	0.00	0.00
What can you do to lower your carbon footprint?	0.00	0.00	0.00	0.00
What can we do to protect natural resources?	0.00	0.00	0.00	0.00
What makes renewable energy better for our planet?	0.00	0.00	0.00	0.00

Table 21. Salem 3rd Grade Pre-Intervention Student Survey Results

Salem 3rd Grade Survey Data	Mean	Median	Mode	Standard Deviation
I like school	3.48	4.00	4.00	1.43
I am excited about math at school	3.94	4.00	5.00	1.24
I am excited about reading at school	3.75	4.00	5.00	1.26
I am excited about science at school	3.13	3.00	3.00	1.31
I am excited to learn about climate change and how I can keep the earth clean	4.14	4.00	5.00	0.99
I am excited about Change is Simple's lessons	4.10	4.00	5.00	1.08
I take action to improve the earth	3.87	4.00	5.00	1.09
I want to take action to improve the earth	3.93	4.00	5.00	1.20
I am interested in my school lessons	3.80	4.00	5.00	1.23
I have used the information from my school lessons in my real life	3.89	4.00	5.00	1.12
I am excited to learn more about science	3.46	4.00	5.00	1.38
I tell my family and friends what i have learned in school	4.06	4.00	5.00	1.15
I tell my family and friends about how they can save the environment	3.54	4.00	5.00	1.44
It is important to take care of the earth for my whole life	4.34	5.00	5.00	1.07
I plan to take care of the earth for my whole life	3.93	4.00	5.00	1.16
I do things with my family to take care of the earth	3.87	4.00	5.00	1.23
I do things with my friends to take care of the earth	3.73	4.00	5.00	1.24
I want to do something that impacts my community	4.10	4.00	5.00	1.00
I think all students should learn about climate change and how to keep the earth clean	4.14	5.00	5.00	1.07
I feel like I have the power to make an impact to keep the environment clean	4.01	4.00	5.00	1.23
Self-Identified Environmental Behaviors				

I recycle	3.79	4.00	5.00	1.17
I save water at home	3.86	4.00	5.00	1.30
I pick up trash	3.70	4.00	5.00	1.26
I compost	2.28	1.00	1.00	1.62
I save energy	3.83	4.00	5.00	1.36
I use reusable water bottles	3.69	4.00	5.00	1.42
I use reusable containers	3.55	4.00	5.00	1.51
I donate clothes and toys	3.46	3.00	5.00	1.51
I do things with my friends to take care of the earth	2.97	3.00	3.00	1.52
I want to do something that impacts my community	2.90	3.00	1.00	1.61
I think all students should learn about climate change and how to keep the earth clean	3.38	3.00	5.00	1.45
Curriculum Questions				
What is the difference between weather and climate?	0.04	0.00	0.00	0.36
What are the three R's?	0.00	0.00	0.00	0.00
What is a way to protect forests?	0.00	0.00	0.00	0.00
Give an example of a non-living part of an ecosystem?	0.00	0.00	0.00	0.00
What is that amount of light reflection called?	0.00	0.00	0.00	0.00
What actions create air pollution?	0.00	0.00	0.00	0.00
What actions create water pollution?	0.00	0.00	0.00	0.00
How can you help the forest ecosystem?	0.00	0.00	0.00	0.00
How can you help the planet when buying food?	0.00	0.00	0.00	0.00
What can you do to lower your carbon footprint?	0.00	0.00	0.00	0.00
What can we do to protect natural resources?	0.00	0.00	0.00	0.00
What makes renewable energy better for our planet?	0.00	0.00	0.00	0.00

Table 22. Salem 4th Grade Pre-Intervention Student Survey Results

Salem 4th Grade	Mean	Median	Mode	Standard Deviation
I like school	3.67	4.00	4.00	1.24
I am excited about math at school	4.00	4.00	5.00	1.21
I am excited about reading at school	3.61	4.00	5.00	1.45
I am excited about science at school	3.78	4.00	5.00	1.31
I am excited to learn about climate change and how I can keep the earth clean	4.02	4.00	5.00	1.12
I am excited about Change is Simple's lessons	4.46	5.00	5.00	0.97
I take action to improve the earth	4.09	4.00	5.00	1.09
I want to take action to improve the earth	4.13	4.50	5.00	1.10
I am interested in my school lessons	3.93	4.00	5.00	1.08
I have used the information from my school lessons in my real life	3.85	4.00	5.00	1.20
I am excited to learn more about science	3.85	4.00	5.00	1.20
I tell my family and friends what I have learned in school	3.98	4.00	5.00	1.16

I tell my family and friends about how they can save the environment	3.47	3.00	5.00	1.38
It is important to take care of the earth for my whole life	4.11	5.00	5.00	1.12
I plan to take care of the earth for my whole life	3.83	4.00	5.00	1.17
I do things with my family to take care of the earth	3.83	4.00	5.00	1.22
I do things with my friends to take care of the earth	3.66	4.00	5.00	1.29
I want to do something that impacts my community	4.02	4.00	5.00	1.18
I think all students should learn about climate change and how to keep the earth clean	4.00	4.00	5.00	1.19
I feel like I have the power to make an impact to keep the environment clean	3.91	4.00	5.00	1.33
Self-Identified Environmental Behaviors				
I recycle	3.92	4.00	5.00	1.17
I save water at home	4.15	5.00	5.00	1.06
I pick up trash	3.66	4.00	5.00	1.16
I compost	2.62	2.00	1.00	1.61
I save energy	3.68	4.00	5.00	1.17
I use reusable water bottles	3.92	5.00	5.00	1.34
I use reusable containers	3.96	5.00	5.00	1.36
I donate clothes and toys	3.91	5.00	5.00	1.33
I talk to my family about cleaning the earth	2.90	3.00	3.00	1.47
I talk to my friends about cleaning the earth	2.71	3.00	1.00	1.54
I take actions to clean the earth	3.38	3.00	5.00	1.39
Curriculum Questions				
What is electricity production?	0.00	0.00	0.00	0.00
What is renewable energy?	0.04	0.00	0.00	0.19
What are the gases called that get stuck in our atmosphere?	0.00	0.00	0.00	0.00
What is your carbon footprint?	0.00	0.00	0.00	0.00
Name 3 fossil fuels.	0.02	0.00	0.00	0.14
What actions create air pollution?	0.02	0.00	0.00	0.14
What actions create water pollution?	0.00	0.00	0.00	0.00
How can you help the forest ecosystem?	0.00	0.00	0.00	0.00
How can you help the planet when buying food?	0.00	0.00	0.00	0.00
What can you do to lower your carbon footprint?	0.00	0.00	0.00	0.00
What can we do to protect natural resources?	0.00	0.00	0.00	0.00
What makes renewable energy better for our planet?	0.00	0.00	0.00	0.00

Table 23. Salem 5th Grade Pre-Intervention Student Survey Results

Salem 5th Grade	Mean	Median	Mode	Standard Deviation
I like school	3.16	3.00	3.00	1.21
I am excited about math at school	2.91	3.00	3.00	1.37

I am excited about reading at school	3.16	3.00	3.00	1.23
I am excited about science at school	3.12	3.00	3.00	1.14
I am excited to learn about climate change and how I can keep the earth clean	3.67	4.00	4.00	1.07
I am excited about Change is Simple's lessons	3.71	4.00	3.00	1.15
I take action to improve the earth	3.52	3.00	3.00	0.80
I want to take action to improve the earth	3.88	4.00	3.00	0.94
I am interested in my school lessons	3.05	3.00	3.00	1.21
I have used the information from my school lessons in my real life	3.22	3.00	3.00	1.24
I am excited to learn more about science	3.02	3.00	3.00	1.21
I tell my family and friends what I have learned in school	3.19	3.00	3.00	1.38
I tell my family and friends about how they can save the environment	2.64	3.00	3.00	1.31
It is important to take care of the earth for my whole life	4.00	4.00	5.00	1.05
I plan to take care of the earth for my whole life	3.14	3.00	3.00	1.22
I do things with my family to take care of the earth	2.90	3.00	3.00	1.18
I do things with my friends to take care of the earth	3.05	3.00	3.00	1.25
I want to do something that impacts my community	3.45	3.00	3.00	1.08
I think all students should learn about climate change and how to keep the earth clean	3.57	4.00	3.00	1.13
I feel like I have the power to make an impact to keep the environment clean	3.05	3.00	4.00	1.41
Self-Identified Environmental Behaviors				
I recycle	3.60	4.00	5.00	1.31
I save water at home	3.41	4.00	4.00	1.31
I pick up trash	3.21	3.00	3.00	1.15
I compost	2.33	2.00	3.00	1.15
I save energy	3.22	3.00	4.00	1.19
I use reusable water bottles	3.14	3.00	5.00	1.44
I use reusable containers	3.67	4.00	4.00	1.26
I donate clothes and toys	3.07	3.00	5.00	1.46
I do things with my friends to take care of the earth	2.17	2.00	1.00	1.39
I want to do something that impacts my community	2.02	1.00	1.00	1.29
I think all students should learn about climate change and how to keep the earth clean	2.29	2.00	1.00	1.32
Curriculum Questions				
Is water a limited or unlimited natural resource?	0.03	0.00	0.00	0.18
What can be done to create new soil?	0.02	0.00	0.00	0.13
How much water is available for human use?	0.02	0.00	0.00	0.13
What is the benefit of buying local food?	0.02	0.00	0.00	0.13
What is bioaccumulation?	0.00	0.00	0.00	0.00
What actions create air pollution?	0.00	0.00	0.00	0.00

What actions create water pollution?	0.00	0.00	0.00	0.00
How can you help the forest ecosystem?	0.02	0.00	0.00	0.13
How can you help the planet when buying food?	0.02	0.00	0.00	0.13
What can you do to lower your carbon footprint?	0.00	0.00	0.00	0.00
What can we do to protect natural resources?	0.00	0.00	0.00	0.00
What makes renewable energy better for our planet?	0.00	0.00	0.00	0.00

Table 24. Woburn 3rd Grade Pre-Intervention Student Survey Results

Woburn 3rd Grade	Mean	Median	Mode	Standard Deviation
I like school	3.73	4.00	5.00	1.26
I am excited about math at school	3.65	4.00	5.00	1.35
I am excited about reading at school	3.65	4.00	4.00	1.08
I am excited about science at school	4.08	4.00	5.00	1.23
I am excited to learn about climate change and how I can keep the earth clean	4.50	5.00	5.00	1.01
I am excited about Change is Simple's lessons	3.75	4.00	5.00	1.21
I take action to improve the earth	4.08	4.00	5.00	0.94
I want to take action to improve the earth	4.18	4.00	5.00	0.96
I am interested in my school lessons	3.70	4.00	4.00	1.18
I have used the information from my school lessons in my real life	3.78	4.00	5.00	1.23
I am excited to learn more about science	3.88	4.00	5.00	1.34
I tell my family and friends what I have learned in school	3.70	4.00	5.00	1.38
I tell my family and friends about how they can save the environment	3.80	4.00	5.00	1.40
It is important to take care of the earth for my whole life	4.30	5.00	5.00	1.14
I plan to take care of the earth for my whole life	3.95	4.00	5.00	1.06
I do things with my family to take care of the earth	3.60	4.00	5.00	1.35
I do things with my friends to take care of the earth	3.70	4.00	4.00	1.20
I want to do something that impacts my community	3.80	4.00	5.00	1.20
I think all students should learn about climate change and how to keep the earth clean	3.90	4.50	5.00	1.41
I feel like I have the power to make an impact to keep the environment clean	3.75	4.00	5.00	1.37
Self-Identified Environmental Behavior				
I recycle	4.00	4.50	5.00	1.24
I save water at home	3.63	4.00	5.00	1.27
I pick up trash	3.58	3.50	5.00	1.28
I compost	2.73	3.00	1.00	1.50
I save energy	3.70	4.00	5.00	1.49
I use reusable water bottles	3.53	4.00	5.00	1.45

I use reusable containers	3.80	5.00	5.00	1.52
I donate clothes and toys	3.50	4.00	5.00	1.48
Curriculum Questions				
What is habitat loss?	0.00	0.00	0.00	0.00
What is the difference between weather and climate?	0.00	0.00	0.00	0.00
What is a way to protect forests?	0.00	0.00	0.00	0.00
Give an example of a non-living part of an ecosystem?	0.00	0.00	0.00	0.00
Name a benefit of non-living part of an ecosystem?	0.00	0.00	0.00	0.00
Name a benefit of renewable energy?	0.00	0.00	0.00	0.00
What actions create water pollution?	0.00	0.00	0.00	0.00
How can you help the forest ecosystem?	0.00	0.00	0.00	0.00
How can you help the planet when buying food?	0.00	0.00	0.00	0.00

Table 25. Woburn 4th Grade Pre-Intervention Student Survey Results

Woburn 4th Grade	Mean	Median	Mode	Standard Deviation
I like school	3.38	3.00	4.00	0.94
I am excited about math at school	3.27	4.00	4.00	1.37
I am excited about reading at school	3.53	4.00	5.00	1.42
I am excited about science at school	3.62	4.00	5.00	1.21
I am excited to learn about climate change and how I can keep the earth clean	3.98	4.00	4.00	1.08
I am excited about Change is Simple's lessons	4.18	4.00	5.00	1.05
I take action to improve the earth	4.04	4.00	4.00	0.90
I want to take action to improve the earth	3.96	4.00	5.00	0.98
I am interested in my school lessons	3.47	4.00	4.00	1.10
I have used the information from my school lessons in my real life	3.62	4.00	4.00	1.15
I am excited to learn more about science	3.42	4.00	4.00	1.16
I tell my family and friends what i have learned in school	3.56	4.00	4.00	1.12
I tell my family and friends about how they can save the environment	3.67	4.00	4.00	1.24
It is important to take care of the earth for my whole life	4.27	4.00	5.00	0.86
I plan to take care of the earth for my whole life	3.84	4.00	5.00	1.07
I do things with my family to take care of the earth	3.56	3.00	3.00	1.14
I do things with my friends to take care of the earth	3.44	3.00	3.00	1.20
I want to do something that impacts my community	3.91	4.00	3.00	0.95
I think all students should learn about climate change and how to keep the earth clean	4.02	4.00	5.00	1.18
I feel like I have the power to make an impact to keep the environment clean	3.76	4.00	4.00	1.15

Self-Identified Environmental Behaviors				
I recycle	3.73	4.00	3.00	1.12
I save water at home	3.58	3.00	3.00	1.12
I pick up trash	3.13	3.00	3.00	1.32
I compost	2.36	2.00	1.00	1.35
I save energy	3.58	4.00	5.00	1.25
I use reusable water bottles	3.87	4.00	5.00	1.38
I use reusable containers	3.78	4.00	5.00	1.31
I donate clothes and toys	3.29	3.00	3.00	1.46
I talk to my family about cleaning the earth	2.67	3.00	3.00	1.19
I talk to my friends about cleaning the earth	2.67	3.00	3.00	1.13
I take actions to clean the earth	3.20	3.00	3.00	1.22
Curriculum Questions				
What is electricity production?	0.00	0.00	0.00	0.00
What is renewable energy?	0.00	0.00	0.00	0.00
What are the gases called that get stuck in our atmosphere?	0.00	0.00	0.00	0.00
What is your carbon footprint?	0.00	0.00	0.00	0.00
Name 3 fossil fuels.	0.00	0.00	0.00	0.00
What actions create air pollution?	0.00	0.00	0.00	0.00
What actions create water pollution?	0.00	0.00	0.00	0.00
How can you help the forest ecosystem?	0.00	0.00	0.00	0.00
How can you help the planet when buying food?	0.00	0.00	0.00	0.00
What can you do to lower your carbon footprint?	0.00	0.00	0.00	0.00
What can we do to protect natural resources?	0.00	0.00	0.00	0.00
What makes renewable energy better for our planet?	0.00	0.00	0.00	0.00

Table 26. Woburn 5th Grade Pre-Intervention Student Survey Results

Woburn 5th Grade	Mean	Median	Mode	Standard Deviation
I like school	3.38	3.00	4.00	0.94
I am excited about math at school	3.27	4.00	4.00	1.37
I am excited about reading at school	3.53	4.00	5.00	1.42
I am excited about science at school	3.62	4.00	5.00	1.21
I am excited to learn about climate change and how I can keep the earth clean	3.98	4.00	4.00	1.08
I am excited about Change is Simple's lessons	4.18	4.00	5.00	1.05
I take action to improve the earth	4.04	4.00	4.00	0.90
I want to take action to improve the earth	3.96	4.00	5.00	0.98
I am interested in my school lessons	3.47	4.00	4.00	1.10
I have used the information from my school lessons in my real life	3.62	4.00	4.00	1.15
I am excited to learn more about science	3.42	4.00	4.00	1.16

I tell my family and friends what I have learned in school	3.56	4.00	4.00	1.12
I tell my family and friends about how they can save the environment	3.67	4.00	4.00	1.24
It is important to take care of the earth for my whole life	4.27	4.00	5.00	0.86
I plan to take care of the earth for my whole life	3.84	4.00	5.00	1.07
I do things with my family to take care of the earth	3.56	3.00	3.00	1.14
I do things with my friends to take care of the earth	3.44	3.00	3.00	1.20
I want to do something that impacts my community	3.91	4.00	3.00	0.95
I think all students should learn about climate change and how to keep the earth clean	4.02	4.00	5.00	1.18
I feel like I have the power to make an impact to keep the environment clean	3.76	4.00	4.00	1.15
Self-Identified Environmental Behaviors				
I recycle	3.50	4.00	5.00	1.33
I save water at home	3.32	4.00	4.00	1.41
I pick up trash	3.24	3.00	3.00	1.13
I compost	2.23	2.00	3.00	1.12
I save energy	3.22	3.00	4.00	1.18
I use reusable water bottles	3.11	3.00	5.00	1.14
I use reusable containers	3.62	4.00	4.00	1.21
I donate clothes and toys	3.09	3.00	5.00	1.82
I talk to my family about cleaning the earth	2.12	2.00	1.00	1.28
I talk to my friends about cleaning the earth	2.12	1.00	1.00	1.32
I take actions to clean the earth	2.21	2.00	1.00	1.27
Curriculum Questions				
Is water a limited or unlimited natural resource?	0.00	0.00	0.00	0.00
What can be done to create new soil?	0.00	0.00	0.00	0.00
How much water is available for human use?	0.00	0.00	0.00	0.00
What is the benefit of buying local food?	0.00	0.00	0.00	0.00
What is bioaccumulation?	0.00	0.00	0.00	0.00
What actions create air pollution?	0.00	0.00	0.00	0.00
What actions create water pollution?	0.00	0.00	0.00	0.00
How can you help the forest ecosystem?	0.00	0.00	0.00	0.00
How can you help the planet when buying food?	0.00	0.00	0.00	0.00
What can you do to lower your carbon footprint?	0.00	0.00	0.00	0.00
What can we do to protect natural resources?	0.00	0.00	0.00	0.00
What makes renewable energy better for our planet?	0.00	0.00	0.00	0.00