RREV Academic Innovation Sustainability Template

This template provides an outline of the components required of a RREV Innovative Pilot Sustainability Plan. The information in this template will serve as the basis for requests for schools/districts to proceed with an individually designed RREV Pilot Sustainability Plan.

Section 1: Define the Primary Sustainability Need

Sustainability for your pilot innovation can be described in three different levels of impact which we will define below.

Maintain – Least amount of contextual change. You are basically working with the same group of students and teachers to solidify the potential impact of your pilot and gather enough data to consider the pilot's potential in new contexts.

Spread – Innovation or reform implemented in greater numbers of **similar grade level classrooms** and includes the activities, structures, materials, and underlying beliefs, norms, and pedagogical principles associated with the change strategy. –Coburn, 2003

Scale - Innovation or reform is implemented in greater numbers of **diverse grade level classrooms and schools** and includes the activities, structures, materials, and underlying beliefs, norms, and pedagogical principles associated with the change strategy.

A. In the table below, select the level of impact and describe the pilot-identified student needs / problems that your plan will continue to address for both the 2023/2024 school year and for the next 3-5 years.

2023 / 2024 School Year
Identify: **MAINTAIN** / SPREAD / SCALE

Gardiner Area High School will maintain our outdoor earth science experience for school year 23/24.

Define sustainability need(s):

The first year of our RREV award specifically addressed the freshmen earth science classes. These students, new to the high school, had barely made it through Covid. They were arriving with declining grades, behavioral issues, and overall disengagement. They didn't see the need to learn earth science concepts because it didn't impact their world and they were skeptical about a class that didn't have a book. Learning outside was a novel concept and some were concerned about not having the appropriate "stuff". This was our starting point.

Nearly 20% of this year's freshmen class have a significant reading deficiency. (Twelve students read at a second grade level.) As a result, behavior has become an issue in a couple of classes. From their perspective, it is better to be the wise guy than the dumb kid. There is also a significant number of students who struggle with attention and can only stay engaged for 50 minutes of the 80 minute class. Both of these issues are affecting the implementation of the challenging performance-based education and clearly haven't eliminated the barriers for those with disabilities.

Our plan is to address these issues through continued outdoor education. Research on outdoor education indicates learning in this environment develops independence, problem-solving skills, and self-discipline.

There is also documentation that access to nature decreases symptoms of ADHD, enhances overall academic performance, and is just plain fun.

3-5 year plan

Identify: MAINTAIN / SPREAD / SCALE

Gardiner Area High School will maintain our outdoor earth science experience for the next 3 to 5 years.

Define sustainability need(s):

Our target population continues to be freshmen entering the high school for the very first time. Speaking with administration at the middle school, the next two classes have a similar population of struggling readers. (Considering the documented negative effects of Covid, this may be the norm for the next several years.) As a result, the need at GAHS is to maintain until we can be assured that this hands-on approach with engaging, experiential opportunities will work with all students entering grade 9 - regardless of preparedness.

B. Identify which additional students would be impacted, targeted, or supported as a result of your sustainability plan.

Review and describe the evidence (quantitative and qualitative data and research) that demonstrates the impact your pilot had on the original student populations and describe how this data informs your choice to Maintain / Spread / Scale.

Use data that will provide evidence your innovation supports the target student population. This may include the performance of various groups of students (e.g., students in rural locales, students from low socio-economic conditions, students with disabilities, students who are Els, students at risk for dropping out, student who are homeless) with regard to academic achievement, graduation rates, social emotional and mental wellness, economic data, and/or workforce participation.

A focus of the sustainability plan, and the reason for maintaining, is to strengthen the program so that more students have success. While there was significant success in our pilot year - increased percentages of students passing classes and huge strides in outdoor knowledge, when digging deeper into the data, there were concerns.

One piece of evidence that supports the reasoning for maintaining revolves around academic growth. GAHS has three levels of each class: honors, grade level, and essentials. Students at the honors level didn't see any change. (They were already at 95%.) Those at the lower level, essentials, did not achieve the same level of success as the other two. In fact, the difference is a hefty double-digit number. The other data set that supports the need to maintain is the growth in outdoor experiential knowledge. There is again a noticeable difference, but this time the lack of growth occurs with the grade level classes. (See the data in the following section.) The discrepancies indicate the need for further work.

Section 2: Data Informed Sustainability

A. Provide the Logic Model your school used to implement your Pilot

RREV District Logic Model

District: MSAD#11 - Gardiner Area HIgh School

Problem Statement

Gardiner Area High School needs to change the instructional method of their freshman earth science course to rebound from alarming negative trends. Similar to what other districts are experiencing, we note average grades declining, failures increasing, academic growth decreasing, disengagement increasing, and a large increase in social/emotional issues.

Table 1. Project Logic Model[1]

Resources	Strategies and Activities	Outputs	Short-Term Outcomes	Long-Term Outcomes	Impact
-RREV program $$$ -Training nd collaboration with experiential community experts -School grounds as the site for trail building, observation centers, and other outdoor activities.	1. Create earth science curriculum that brings freshmen outside for 75% of class for performance based instruction 2. Provide equipment and clothing for experiential learning and classroom instruction 3. Provide adaptive equipment to insure the course is inclusive of all students regardless of physical abilities 4. Provide professional development for teachers to learn how to adapt current lessons to outdoor activities.	Sample of performance based earth science lesson Curriculum development with experiential education experts Students have participated in several experiential activities	Change in instructional practice for earth science course Improved student engagement School staff open to trying a lesson outdoors	Students and families use provided equipment on weekends and during vacations Program of Studies includes Outdoor Leadership class for seniors to mentor freshman Decrease in failure rates for freshmen Increase in student engagement District has built an outdoor classroom for use by all content areas	Educators use skills to adapt lessons to include an outdoor component in all content area Freshmen students continue to maintain and improve trails for community use Community recognizes importance of outdoor learning and supports programs by volunteering to chaperone or teach at trips and other experiential activities Students have improved social/emotional skills and engagement with nature.

B. Describe the data you collected about your innovation pilot outcomes that will be used to inform and shape your plan to MAINTAIN / SPREAD / SCALE

As the first weeks of our pilot progressed and equipment began arriving, most students acclimated to being outside everyday regardless of weather. Having the "stuff" eased some of the concerns, but a minority still struggled with being outside while others were slow to join in the collaborative experiential activities.

As the year progressed and it became the norm to learn outside, more and more students jumped on board with the hands-on learning approach. They began to see the real-world connections and were vocal about how engaging it was to be exposed to new experiences. At the end of the year, most grades improved and student's exhibited growth.

We collected data with two separate perspectives, one for students and the other for staff. The first data set, academic growth, was measured using passing rates for our students. We analyzed the percentages from the previous school year in each category, honors, grade level, and essentials, and compared it to the

percentages of this year. The honors students in school years 21/22 and 22/23 passed earth science 95% of the time - no change. The grade level students in 21/22 passed 86% of the time and in 22/23 the passing rate was 90%, a four percent increase. During school year 21/22, the essentials students passed 75% of the time compared to the 22/23 year with a passing rate of 81%. This was a six percent increase. While there is proof of improvement, the improvement isn't equitable. The high achievers had no change which could indicate the outdoor classroom has had no effect. The essentials group, most with IEP's, are nowhere near the 95% success rate of the honors students. This 14% gap is a concern.

The other student data set is growth in outdoor experiential knowledge - this falls under two categories. First is knowledge (tree identification, soil profiles, erosion, etc) and the other is experiential (cooperative learning, ability to communicate effectively, and other critical skills found in the Maine Guiding Principles). This exam was based on a scale of 1 - 10. This data was collected in a pre and post assessment and divided into the three levels:

Honors earth science
Pre-assessment score average 4.2
Post-assessment score average 8.6
a change of 4.4

Grade level earth science
Pre-assessment score average 5.5
Post-assessment score average 8.9
a change of 3.4

Essential earth science
Pre-assessment score average 2.2
Post-assessment score average 7.8
a change of 5.6

The students in the honors level had a sizable increase. These students, generally highly motivated students, tend to learn best through conventional book learning techniques, but will work incredibly hard to maintain their grade point averages. The grade level students also had an increase, but a point lower than the honors students. The results could be explained by understanding these students tend to be hands-on learners that have opportunities outside the classroom. Many of them are involved in Girl/Boy Scouts, the Boys and Girls club, Outward Bound, or have parents that enjoy outdoor activities introducing their children to these experiences. The essentials students had the largest gain in knowledge. Many of these students come from underprivileged families that don't have access to the gear or equipment needed for the outdoor activities. This group also has an attendance issue. With the combination of little opportunity at home and missing more days of school, we need to make additional changes to support this group. More concentration on this group could explain why essential students are growing in their knowledge, but not translating it to a passing grade.

The other important data came from surveys collected from school staff at the end of the school year. The survey's intent was to garner the level of success from "outside eyes." This survey brought to light how the program affected others in our building. While 92% of those surveyed rated the program a complete success, and could provide examples to support their rating, several concerns emerged. First and foremost was the

additional work the program created for our janitorial/maintenance staff. The amount of mud tramped through the hallways and into classrooms created, at least, an additional 30 to 60 minutes of work each day sweeping and mopping. Other classroom teachers noted disturbances as we hauled materials into the building (soil for sampling, piles of snow, etc). Finally, students expected, or asked, other teachers to go outside and many did not feel adequately trained to do so.

The data collected and analyzed supports that students are having varying degrees of success in the outdoor classroom, but the program needs some "tweeking" to ensure it runs smoothly within the confines of MSAD11 expectations. The data supports the need to maintain the program, and make adaptations, to ensure success at all levels for both students and staff.

C. List new data that you will need to collect to further inform and shape your plan to MAINTAIN / SPREAD / SCALE

Currently, the data that we have collected is mostly quantitative. While outside evaluators met with parents, interviewed students, and had a panel discussion with our partners, we did not. The numbers are helpful, but they do not tell the whole story. To begin to unravel the discrepancies in passing rates, we, too, need to bring in more qualitative data. We plan to add the follow:

1. A student survey will be added to the end of each semester. This anonymous survey will be administered during midterms/finals by a school employee that isn't associated with the program.

2. A volunteer video recorded student interview will be added during the months of January and June. This interview will be administered by the earth science teacher after school to unearth potential barriers to success.

3. An oral parent survey will be offered during parent teacher conferences. This survey will be given in October and March to those attending and will then be offered online to those unable to attend in person.

4. At the end of the school year, the administrator team member will compare attendance rates with student failures.

Section 3: What is the intended impact of your sustainability plan

A. Describe the goals of your sustainability plan.

Consider how your plan will continue to meet the needs of the identified target student population(s) and describe changes in policy, practice, or structures necessary to MAINTAIN / SPREAD / SCALE your innovation.

2023 / 2024 School Year

Goal #1 -

Build a satellite space to eliminate the need to bring materials into school and the extra work by the janitor staff. We have already entered into an agreement with the Maine Cabin Masters to erect the building.

Goal #2 -

Offer after school makeup sessions for those students who have missed class. These bonus opportunities would offer more one-on-one time with students struggling with reading issues and/or attendance.

Goal #3 -

Provide more family support by offering similar experiential learning opportunities on Saturdays. This would invite more parental contact which could lead to reduced attendance issues, greater support for outdoor learning, and a more complete understanding of the program.

Goal #4 -

Provide professional development for non-science staff on how to incorporate outdoor opportunities. The earlier trainings have been to plan participation within all science fields: biology, chemistry, and physics. This new focus would embed the outdoor concept throughout the building and reinforce the benefits.

Goal #5 -

Continue building a challenging, meaningful, performance-based curriculum.

Goal #6-

Purchasing instructional supplies needed for the curriculum being built

3 – 5 Year Plan

Goal #7

As retirements occur in the science department, hire an experiential outdoor instructor.

Goal #8

Work with our principal to create an elective course to allow upperclassmen who were successful in the earth science class to assist in it. These leadership positions would provide mentors to freshmen, an opportunity to practice/teach skills previously acquired, and a chance to grow the program beyond the 9th grade year.

Goal #9

With the addition of our satellite building and professional development of teachers, this would be the right set of circumstances to combine different content areas and co-teach. For example a physics teacher with a math teacher to put the concepts into a real world math problem.

B. UMaine GANTT Chart

	Fall 23	Spring 23	Fall 24	Spring 24	Fall 25	Spring 25
Eliminate issues of materials and extra work for GAHS staff	Erect the satellite building					
Program for continued support of unsuccessful students	After school makeup					
Program to increase community support and buy in	Family events					
Training		PD for staff	PD for staff		PD for staff	
Advances pilot program with expert in field			Hire outdoor educator			
Assures continued growth in pilot program				Create Outdoor Mentorship course and implement		
Assures continued growth in pilot program					Cross content teaching	

Section 4: Identify Key Expenses and Necessary Resources

A. Describe budget expenditures and necessary resources required to MAINTAIN / SPREAD / SCALE your innovation through June 2024.

Essential Expenditures:

Description of Expense	Budgeted Amount
Satellite building	$25,000
Related building expenses (rain barrels, permits, signage, hooks, baskets, electrical work, etc)	$7,000
Family Events (food, drinks, handouts, and personnel associated the reveal with Maine Cabin Masters, fat tire biking, ice fishing, etc)	$3,000
Salaries and benefits	$5,000

Necessary Resources:

Professional development time supplied by the district to assure continued support and training of necessary skills to continue the outdoor program.

Community partners, such as Upstream, to provide real life projects that connect our student population to our surrounding city and towns.

Volunteers, both in house staff and parents, to support experiential learning that is off campus - examples are the alewives collecting with DMR and ice fishing.

The equipment purchased during the 2022-23 school year by the RREV grant that supports the curriculum.

B. Describe budget expenditures and necessary resources required to MAINTAIN / SPREAD / SCALE your innovation BEYOND June 2024

Expenses could include staff time, materials, professional development activities, facilities, and other related expenses. This section does not need to include specific costs, but rather list out the different costs that should be considered to implement the innovation.

Essential Expenditures:
Budgeted science monies to replace broken, worn out, or lost clothing - $1000

District upkeep of the satellite building (repair of any vandalism, maintenance of solar panels, etc) - $1000

Continued professional development each year to update best practices, train new staff, and provide continued support - $1,000

Necessary Resources:
The satellite building created and designed by Maine Cabin Masters.

Continued staff support that turns into collaborative teaching opportunities and usage of the satellite building by all content areas.

Professional development time supplied by the district to assure continued support and training of necessary skills to continue the outdoor program.

Community partnerships, such as Upstream, to provide real life projects that connect our student population to our surrounding city and towns.

Volunteers, both in house staff and parents, to support experiential learning that is off campus - examples are the alewives collecting with DMR and ice fishing.

The satellite building that was created and designed by Maine Cabin Masters.

The equipment purchased by the RREV grant that supports the curriculum.