

## 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

Define sustainability need(s):

As a rural, Title 1 public school, we have faced a significant challenge with attendance and academic engagement since the pandemic began, especially from students at risk of dropping out or who are from lower socio-economic backgrounds and need to balance their academic pursuits with their immediate familial needs.

As we look towards the 2023/2024 school year, our primary focus as a school is to cement project-based, outdoor learning as the focal point for our academic program and to fully embrace our mission of engaging students through experiential learning that connects skill building, academic content, and their professional aspirations on campus.

By incorporating curricular support for all teachers, funding outdoor learning resources for classes, and constructing a Maker Space Barn for an on campus blacksmithing course and outdoor classroom, we aim to find an in roads for every student to pursue their post-secondary aspirations and to find success in their classes.

### **3-5 year plan**

**Identify:** MAINTAIN / SPREAD / SCALE

#### **Define sustainability need(s):**

The 3-5 year timeframe is focused on maintaining current innovations because the identified student need of providing experiential learning that connects skill building, academic content, and their professional aspirations will improve outcomes for all students. While much of our 3-5 year plan will be focused on solidifying the structures, protocols, relationships, tools and resources that we have available to our faculty and students through the Maker Space barn, we will also be focused on improving the quality of our instruction on campus through:

1. Robust professional development opportunities on outdoor and experiential learning
2. Individualized training for each of our teachers on their areas of interest in the sciences
3. The development of sustained partnerships with local educational nonprofit organizations
4. The solidification of our interdisciplinary natural science “Intensive” curricula
5. A stipended position that will focus on grant writing and funding for outdoor learning in the coming years.

- 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.*

Our primary focus with this pilot is to improve and connect the hands-on, project-based learning that takes place in our classes with the real world benefits that skill development and career exposure has on our students' future success.

What we hope to achieve with our pilot is to connect the tangible, real-world benefits that our programs — including agriculture, forestry, and blacksmithing — can provide for our students both in an academic sense and in support of their future career aspirations. What we strive to achieve is to develop a post-secondary plan for each of our graduating seniors (whether in academia or in the trades) and to see a continued improvement in graduation rates and career success for our students after they leave the Maine Academy of Natural Sciences.

A few bright spots that we have witnessed just this year include:

1. A sophomore who struggled with attendance and academic engagement since middle school found a career breakthrough during his winter intensive unit on Forestry, in which students learned about sustainability efforts in logging and worked with professionals to understand the ins and outs of the industry.
2. A cultural shift in our new 9th grade class this winter, after taking on a "survival" unit and an overnight trip in which they completed a three-mile trek through heavy snow, built fires on a frozen lake, and spent the night in yurts as a class.
3. A sense of community and ownership from our senior class during their Senior Capstone projects this Spring, in which three seniors budgeted, blueprinted, and constructed a collection of tables, benches, and stools to support the Blacksmithing program for our school in the years ahead.

Already, we have seen strong feedback from our students about their desire for a more consistent and robust outdoor learning program that puts them out in the field regularly and makes better use of the incredible resources that we have on our campus including our 1-acre farm, our greenhouses, and our trail system. What we've also discovered is an overwhelming desire for more vocational pursuits on campus, with 3 out of 4 of current students expressing strong interest in taking a metal working or blacksmithing course in our new Maker Space Barn next year.

## Section 2: Data Informed Sustainability

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

### RREV District Logic Model

#### District: Maine Academy of Natural Sciences

**Instructions:** First in the box below, write two to three sentences describing the problem your RREV project is addressing. Next, create a logic model in Table 1. Please refer to your project application for the resources, strategies and activities, outputs, outcomes, and impacts.

#### Problem Statement

As we enter the 2022/2023 school year, the Maine Academy of Natural Sciences is looking to build on the successes that we've had with student engagement in outdoor learning by building a Maker Space Barn and by hiring an Agricultural Assistant to support project-based learning in every classroom. As a school, student engagement in daily academic courses has been a major challenge during the ongoing pandemic, but this past year, our work to cement project-based learning as the core of our academic program has helped significantly. Through our pilot, we hope to make hands-on, outdoor learning and natural science innovation a focal point for regular classroom instruction every day and to use the Maker Space Barn to offer a Blacksmithing course on campus for all interested students.

**Table 1. Project Logic Model**

Resources	Strategies and Activities	Outputs	Short-Term Outcomes	Long-Term Outcomes	Impact
1. RREV Funding 2. RREV Project Coach 3. Maker Space Barn 4. Agriculture Assistant 5. Campus Resources (Apiary, Sugar Shack, One Acre Farm, Trails,	Build a maker space barn  Hire an agriculture assistant  Set up a blacksmithing program on campus that progressively increases # of students  Connect teachers with PD and funds to	A Maker Space Barn  Expansion of our Agriculture Courses & Curriculum  Outdoor learning and environmental lesson plans developed in a variety of subject areas  Blacksmithing	All teachers use outdoor spaces and natural resources more often in their daily instruction  Students engage in outdoor, experiential learning throughout the week  Students connect academic courses to interests and feel more engaged	Teachers make outdoor learning a regular part of their daily instruction, units, and summative projects year round.  A majority of students feel more engaged with their regular academics classes	Teachers embrace our school's mission fully and demonstrate it in their curricula and instruction  Students are drawn to our campus for our curriculum, to learn outdoors, and to connect their personal passions to their academic learning  Students take ownership in their

Greenhouses, Outdoor Classroom) 6. Intensive Coordinator 7. Curriculum Director	assist with outdoor and environmental education teaching and learning  Create units focused on experiential, project-based learning for all content areas	Curriculum  Student Project collection, documentatio n, and showcases	in their learning  More students are able to take Blacksmithing & Metalworking  Students share their work and learning with our community and utilize our Make Space Barn	All students use outdoors spaces and experiential learning at least twice a week.  Twice as many students are able to take a Blacksmithing course during the coming year.	learning process and utilize our natural resources in their academic work.  Agriculture and Blacksmithing become courses that are offered year round to the majority of our students
<b>Assumptions</b>					
That we are able to construct a maker space barn by the Spring of 2023 (permits, DOE, construction) and thus are able to use this building for instructional and curricular purposes.					

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

At the beginning of this year we collected student and faculty data around outdoor learning at the Maine Academy of Natural Sciences that has helped us prioritize what to focus on in terms of supports, resources, and implementation. What we discovered was that both our faculty and our students expressed three primary areas for improvement: student engagement with their learning, a lack of outdoor learning on campus (despite the resources we have), the need for more support in curricular development and implementation for teachers.

A few of the key data points we have been focused on this year are:

- 64% of students felt that outdoor spaces and resources were “sometimes” to “rarely” used by teachers, despite the fact that 73% of students wanted to use these spaces “every day” or “every other day.”
- 88% of teachers agreed that they would benefit from more direct support in curricular development and in utilization of our outdoor spaces and resources by an Agriculture Assistant.
- A disheartening 22% of students from last year responded that they were “excited about going to class.”
- 3 out of 4 students surveyed expressed a sincere desire to take a blacksmithing or metal working course next year.

What we have tried to focus on this year is solidifying academic curricula that connect directly to our mission of project-based, immersive instruction in the natural sciences, with consistent support for teachers from our Director of Curriculum and Instruction, our Agriculture Specialist, and from a collection of organizations including: The Maine Environmental Education Association, Maine Organic Farmers and Gardeners Association, The Center for School Change, The Outdoor Learning Store, and Rural Aspirations.

Already we have seen some positive results in the overall climate of outdoor learning at our school, as every core content teacher has woven in regular opportunities for students to connect their projects to the outdoors, and the level of engagement on campus has improved tangibly with students showcasing their projects to our community, taking part in overnight field trips, and carving out post-secondary plans with their advisors.

One bright spot from this year is that, of our 21 seniors on campus, all 21 will be graduating this year after taking part in a Career and College preparation course which has helped them focus their efforts in classes towards their post-secondary plans. Many of these seniors will be pursuing college degrees at Maine Universities and community colleges across the state, while several will take on vocational programs and careers in the trades, harnessing the skills they have learned on campus. We hope to continue this trend for every senior class in the years ahead, as we fully embrace our mission and make sure that all MeANS graduates feel supported in connecting their personal passions with their post-secondary plans.

As we head into next year, we will continue to survey students around their level of engagement in classes and in the frequency of outdoor learning on campus, as well as to study the impact that our efforts around shifting the culture of learning at our school will have on attendance, unit completion, and post-secondary preparedness. Lastly, our administrative team has been working on carving out regular check ins with teachers around firming up their curricular plans and documents in order to improve our collective planning, ensure that our projects are mission-driven, and to shift the instructional culture of our school towards immersive, experiential learning for all of our students.

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

The majority of data that we collect during the 2023/2024 academic year will be focused on student experience and engagement as well as the usefulness and benefits that faculty can speak to from our Professional Development sessions and curricular planning. Although we will have regular check ins every quarter, we will focus on collecting data in these primary areas:

1. **Students experience of the blacksmithing course** - This fall, we will be piloting our first ever blacksmithing course on campus and hope to double our enrollment numbers for the year for interested students. We will track participation, course feedback from students, and document curricular adjustments as we go.
2. **Student levels of engagement in core content classes** - As we align our core classes more directly with our mission and outdoor learning, we will continue to survey students on their levels of engagement as well as document their work during our project showcases on campus. We will also create consistent and direct lines of student-to-teacher feedback on the summative projects they take on and what areas could be improved upon for the future.

3. **Teacher feedback on curricular development** - Through biweekly meetings and unit reflections, our Director of Curriculum and Instruction will work to gather teacher feedback on the usefulness of the outdoor learning resources we've acquired as well as regular dialogue about the implementation of projects and outdoor instruction methodology. As a school, we will continue to discuss our mission alignment and to troubleshoot and problem solve during our all-school curricular workshops and debriefs.
4. **Teacher engagement and feedback on professional development** - Lastly, building out more meaningful and engaging Professional Development opportunities for teachers will be a primary focus for the year ahead. What we've realized this year is that having more hands-on, field-based workshop models for teachers has paid dividends, and we will gather regular feedback from teachers about our partnerships with organizations like the Maine Local Living School, MOFGA, and Lenox Lodge as we move through the year.

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

- A. Describe the goals of your sustainability plan (goals & milestones)

*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**

As a school, we have two primary areas that we will focus on maintaining for the year ahead:

1. Expanding the quality and depth of our outdoor learning and instruction
2. Implementing and piloting our first ever blacksmithing program on campus

Our focus group will remain our 10 core content teachers and our 110 campus students at the Maine Academy of Natural Sciences. What we are learning from the year behind us is that there is a definite need for more professional development throughout the year for all of our teachers in order to help them make use of the natural resources that we have on our campus. Much of this support will be taken on by the continuation of an Agriculture Assistant, who will focus on facilitating learning experiences for classes and teachers year round in collaboration with our Agriculture Specialist. However, another major focus will be on building project-based curricula that directly utilize the resources that we have on campus, and fostering meaningful relationships with local outdoor learning organizations in order to cement the importance of experiential learning for our students and faculty.

At this moment, the Maker Space barn is being constructed and will be completed before the end of the school year. Right now, we have a small group of students taking a blacksmithing course off campus who, with the help of our Agriculture specialist, will help set up the course, physical space, and curriculum for the blacksmithing program that we will launch in the fall of 2023. One of our other aims is to spend some time familiarizing faculty with the Maker Space barn as a whole this summer and to begin building projects that can make use of the tools, forges, and outdoor classroom that will be up and running come during the fall of 2023.

On the faculty side, our goals for the year ahead are to cement our project-based learning curricula in every content area as well as to solidify our seasonal "intensive" curricula with ample planning time, instructional resources, and partnerships with local





## 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:

#### 40k Extension Plans for Funding:

\$8,000 → Americorps Volunteer Member

\$5,000 → Development and Resource Coordinator

\$5,000 → Blacksmithing Forges & Materials

\$5,000 → MOFGA programming and events

\$3,000 → Lennox Lodge programming and events

\$6,000 → Maine Local Living School programming and events

\$3,000 → Event funding (*Harvest Fest, MeANS Maple Friday, Summer Celebration*)

\$5,000 → Intensive Curricula Development (in partnership with *Rural Aspirations*)

### Necessary Resources:

These are the resources that are already in place that we will continue to count and rely on to support the innovation:

- Continued planning meetings year-round for our RREV team of teachers and administrators
- Allocation of funds for blueprint plan development of the Maker Space Barn by our Business Manager
- Regular communication with Development & Resource Coordinator around extending outdoor funding
- Frequent check-ins and updates with our school Board about developments and next steps.

- 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:**

- \$5,000 → Curricular Development & teacher trainings around Maker Space Barn offerings
- \$8,000 → Americorps Volunteer stipend to serve as our Agriculture Assistant
- \$17,000 → Compensation for NGO partnerships and collaborative programming in Outdoor Learning
- \$400,000 → Funding for expansion of the Maker Space Barn to include:
  - A commercial grade kitchen wing (\$350,000)
  - A woodworking and carpentry wing (\$50,000)

**Necessary Resources:**

- Professional Development in support of integrated outdoor learning and outdoor leadership certification
- Self-sufficient role established for the Development and Resource Coordinator
- Ongoing Dialogue, Presentations, and Information to Maintain Strong Relationship with our Board.
- Maintain lasting relationships with local Outdoor Learning organizations including:
  - Maine Organic Farmers and Growers Association
  - Coastal Maine Botanical Gardens
  - Darling Marine Center
  - Herring Gut Coastal Science Center
  - Rural Aspirations
  - Maine Local Living School
  - Lennox Lodge
  - Acadia National Park