

## RREV's Innovative Pilot Template

As part of the **Innovative Mindset and Pilot Development** courses being offered through several of Maine's institutions of higher education, the RREV project uses a consistent template for the creation of all future pilots. Because every pilot created and tested with RREV funds WILL BE published in EnGiNE, we want all of Maine's educators to have the assurance of consistency.

This template provides an outline of the components required of an Innovative Pilot. The information in this template will serve as the basis for requests for school/district level project funding.

### Section 1: Define the Need

#### A. Describe your innovation.

*Consider what evidence supports the need for an innovation, and the evidence that suggests your innovation will improve the current situation.*

Upper Kennebec Valley Junior/Senior High School is working hard to grow an innovative outdoor-based education program to increase student engagement and better prepare students for their lives after high school. Attendance data and community input pointed to engagement and preparedness as areas of need. The outdoor-based programs we have developed to address these areas of need consist of three main components: agricultural studies, outdoor education, and wildlife studies. A framework for each of these components is in place, and additional equipment and space are needed to take these programs to the next level. With RREV funding, we can provide students with engaging learning experiences they genuinely value and which ensure they are ready to be successful and productive after high school.

The staff and community of MSAD 13 have been working hard to define and focus on the skills and traits that enable students to be successful. Through an in-depth initiative called "Portrait of a Graduate," students, staff, and community stakeholders determined six competencies the school needs to cultivate: responsibility, confidence, communication, creativity, problem solving, and critical thinking. The district community believes these six competencies will enable students to be successful members of society in their post-secondary lives. We quickly recognized that our current education system values and rewards these competencies, but it has limitations when it comes to instilling and fostering these skills and traits.

The MSAD 13 community determined that we needed engaging, project based educational programming to ensure students graduate fully equipped with these competencies and ready to be successful and productive members of society. Our staff and students took the first steps in launching this program during the 2021-22 school year. Student course success rates, student feedback, and community feedback indicate the program is on track to successfully meet the needs we have defined above.

- 98% of students who participated in these classes engaged with the content and earned passing grades
- 74% of our high school students selected one of our outdoor classes as one of their top-three elective choices for next year
- 91% of community members who provided feedback on our school budget this year indicated they felt the outdoor program was succeeding.

# PORTRAIT OF A GRADUATE

Responsibility



Creativity

Confidence



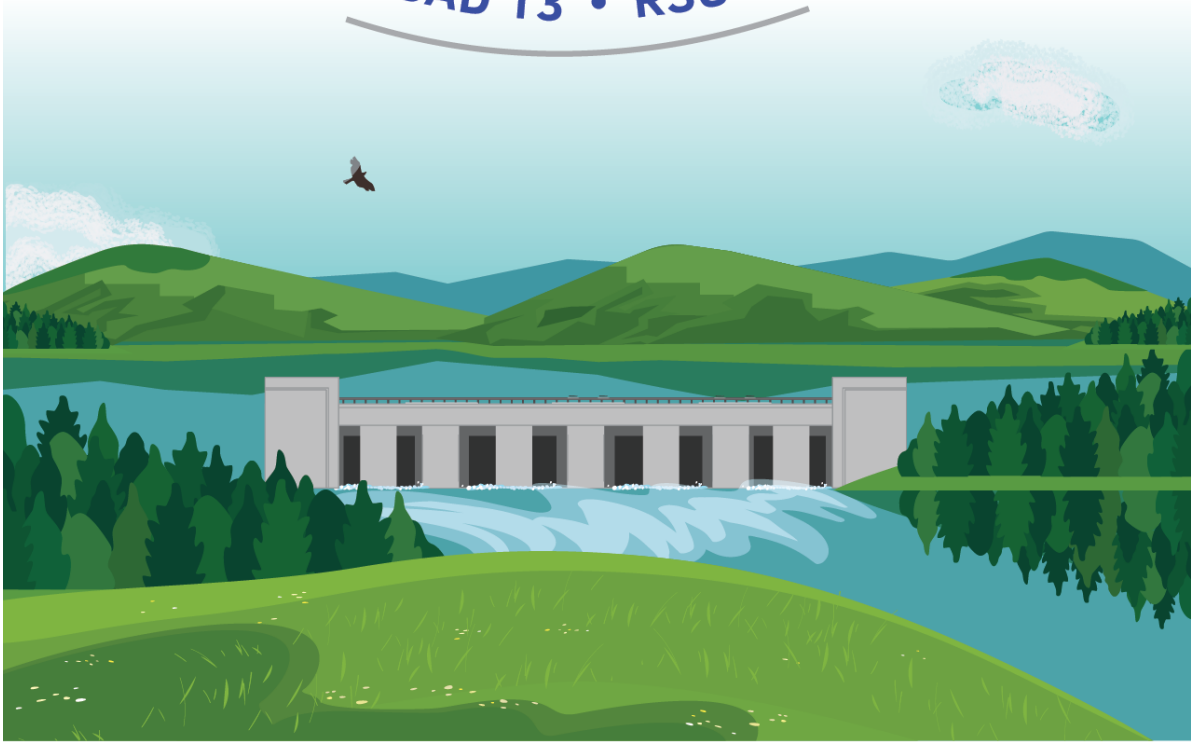
Problem Solving

Communication



Critical Thinking

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**Program Goals, Accomplishments, and RREViNg Up**

**Agricultural Studies**

### ***Program Goals and Addressing Problems***

Our agricultural studies students are working toward the goal of running a small-scale commercial produce business. This program is designed to engage students by giving them a stake in a small business that has a significant and visible impact in the school and includes a financial component with clear real-world connections. Student and parent surveys indicated that a disconnect between the classroom and the real world was a barrier to student engagement. Students in the agricultural studies program construct and manage a greenhouse and garden infrastructure that is prominent on our school grounds, and they are working toward the goal of marketing their produce to the community. The agricultural studies program also addresses the problem of student preparedness, as working toward this goal is guiding our students to develop and exercise a host of skills including problem solving, critical thinking, creativity, communication, collaboration, marketing, salesmanship, and financial management.

### ***What We Have Accomplished***

During the 2021-22 school year, students built a commercial-grade 30' x 48' greenhouse. They started plants from seeds, transplanted them into the greenhouse, and developed care plans including detailed research into the diseases and pests they will need to deal with to keep their plants healthy. In addition to physically constructing the greenhouse, students participated in the planning and proposal phases and helped acquire bids for materials and complete purchase orders. This is knowledge that students can use for the rest of their lives – but it is only one part of our ultimate goal for this program.

### ***What We Need to RREV up the Program***

Our greenhouse is not currently heated. With RREV funding, we hope to outfit the greenhouse with a heating unit so we can lengthen our growing season and time outdoors. We also hope to expand our planting space with cold frames and raised beds.

## **Outdoor Education and Wildlife Studies**

### ***Program Goals and Addressing Problems***

Our outdoor education and wildlife studies students are immersed in outdoor learning experiences that are designed to provide foundational knowledge preparing them for outdoor careers, communication and collaboration skills, and lifelong skills and knowledge in the areas of woodsmanship and sustainable living. These programs are designed to address the problem of poor attendance by providing students the opportunity to spend class time outdoors exploring topics of intrinsic interest with clear connections to the local economy.

### ***What We Have Accomplished***

Our students successfully completed a wide variety of projects and units including the following:

- Tree and plant identification
- Timber cruising
- Archery
- Wilderness navigation
- Sustainable home design and model construction
- Game camera wildlife studies
- Maple syrup production
- Creating a field guide for a local wilderness area

***What We Need to RREV up the Program***

**Outdoor Learning Spaces.** Currently, when students are not able to be outdoors due to weather or activities that require working at tables or similar, our classes are based in classrooms in our main building. This reduces connection with the outdoors, complicates lesson planning, and wastes valuable lesson time as classes travel from outdoor learning spaces back to the main building. We would like to use RREV funding to establish outdoor learning satellite buildings that would enable our outdoor education and wildlife studies classes to complete lectures, demonstrations, and table work while remaining outdoors.

**Equipment for Workshop Projects.** We have emptied out a shop building formerly used for storage and brought it up to code for use as a student workshop. Through small grants, we have been slowly acquiring equipment that has enabled outdoor studies students to complete hands on projects including design and construction of sustainable housing models. With RREV funding, we could purchase the equipment needed to have our student workshop fully up and running. Our students would be able to complete projects ranging from constructing bat houses to boat building.

**Equipment for Water Exploration and Research.** Our school is located in the Kennebec River Valley, and we are surrounded by wetland areas, rivers, streams, ponds, and lakes that would offer incredible learning opportunities if we had the equipment to access them. We would like to use RREV funding to purchase canoes and kayaks as well as associated gear and storage space for these boats. This will enable our outdoor studies and wildlife studies students to access.

B. Identify which students would be impacted, targeted, or supported by the innovation.

*Review the evidence – quantitative and qualitative data and research – that indicates this group of students is considered the most vulnerable and would benefit from the described innovation.*

*Data you can use to inform your innovation, rationale, and targeted student population 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 EIs, 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 innovations will impact our entire student body which consists of 127 students. During the 2021-22 school year, 41% of students were identified as chronically absent. Only 11% of the students enrolled in

outdoor programs were chronically absent, indicating improved engagement as a result of the new offerings. Overall, for the 2021-22 school year, there were 13 truancy incidents, all of which involved students who were not enrolled in our outdoor-based programming. We anticipate the increasing enrollment in our outdoor programming and the additional opportunities we can provide to our students with RREV funding will continue to improve student attendance.

Twenty-six percent of our student body has at least one identified disability and at least ½ are eligible for free and reduced lunch. These vulnerable populations are a priority for us, but we plan to use RREV funding in a way that all students are impacted because we believe that ALL students, regardless of socio-economic status, identified disabilities, or other labels benefit from learning outdoors. Nature provides an equal opportunity for all students and allows them more freedom to problem-solve, make inquiries, and express themselves in creative ways. Again, this pilot is geared towards all students in grades 5-12, including students in our special education programs with adaptive needs. We believe in an inclusive learning environment so all students, including those in self-contained settings, will participate in outdoor learning opportunities.

## Section 2: Describe the Innovation

### A. Describe the goals of your innovation.

*Consider how your innovation will meet the needs of the identified target student population(s) and how you plan to achieve your goals. Additionally, consider any changes in policy, practice or structures you expect as a result of the innovation.*

We have several goals for our innovation:

Goal 1: 100% of students and teachers will participate in at least one or more outdoor learning experiences in 2022-2023. These experiences will be both on and off campus at identified outdoor learning spaces such as fields, ponds, lakes and the forest. Students will have opportunities to utilize a variety of tools and materials such as field cameras, underwater robots and/or cameras, archery equipment, drones, kayaks and canoes to enhance and extend their learning. We will erect a structure and refurbish the wood line in the outdoor courtyard to serve as bases for classroom instruction to occur comfortably outside. We will also secure a prefab storage building to store equipment. Students will be active and engaged participants in these experiences with anecdotal data collected and self-reported on engagement and enjoyment levels with at least 75% of the student population indicating engagement and enjoyment on surveys. This innovation will also reduce behavior infractions by 25% and increase attendance by 15%.

Goal 2: We will install heating infrastructure and expand our growing capacity by adding cold frames to the existing greenhouse structure that our students erected during the 2021-2022 school year. Students have already planned what plants they want to grow as well as what plants grow best together. The intention is to enable use of this space year-round for growing plants, but also to serve as a base for outdoor education lessons. Students will also build a farm stand to allow for selling of produce to put money back into the program for it to continue in the long-term. At least 75% of students will be able to indicate connections on surveys to improved ownership over their learning to their experiences in agricultural studies.

Goal 3: We will purchase a variety of tools, equipment and materials for building in our newly renovated project-based learning classroom. This will allow students to engage in pre-engineering, construction, STEAM and other industrial arts activities which will enhance their ability to problem-solve and think critically. The PEAR assessment tool will indicate increased interest and achievement in science, particularly perseverance, critical thinking, and relationships with peers and adults.

B. Describe activities included in your plan for each stage – preparation (P) or implementation (I) – of your innovation.

- **Preparation** includes building stakeholder awareness, establishing routines and processes, and coordination of logistics.
- **Implementation** includes planned implementation activities, as well as professional development for the educators participating in the innovation.

	<b>Activity</b>	<b>Purpose</b>	<b>Stage (P or I)</b>	<b>Date of Completion</b>	<b>Person Responsible</b>
1.	Secure funding	Will need funds to implement all components of this grant	P	9/22	Melissa Lyons-Vitalone and James Tyler (Leadership team)
2.	Build stakeholder awareness -Teachers - School Board -Parents - Community Members	Building stakeholder knowledge of the research supporting outdoor learning and the benefits of developing children’s social-emotional, physical, and cognitive growth	I	ongoing	Leadership team
3.	Work with buildings and grounds committee	Approve site plans	P	9/22	Leadership team, Superintendent and Building and grounds committee (Administration)
4.	Purchase and install gazebos	Base for outdoor learning and trail camera stations	P	9/22	Administration
5.	Purchase and install cold frames	Expand greenhouse capacity for growing	P	9/22	Administration
6.	Secure and work with contractor for tree and brush removal in courtyard	Refurbish outdoor courtyard for outdoor learning	P	10/22	Administration
7.	Purchase and install propane heating unit for greenhouse	4-season base for outdoor learning	P	9/22	Administration
8.	Purchase and install storage unit	Secure storage for tools and equipment purchased	P	9/22	Administration

9.	Purchase tools, materials, equipment, watercraft, etc.	Provision of expanded outdoor learning opportunities	P	9/22	Leadership team and teachers (Atwood, Davis, Kandico, Pooler + others)
10.	Media coverage	Highlight successes	I	Ongoing	Leadership team, students and teachers
11.	Research and arrange Swift Water Rescue and Wilderness First aid	Training for staff to safely guide students outdoors and in the water	P	9/22	Wilderness Rescue International and interested staff
12.	Curriculum design	Create and/or revise units to incorporate new spaces and materials	I	ongoing	Teachers
13	Implement new units	Enrich current outdoor opportunities through project-based lesson delivery	I	10/22	Leadership team and teachers
14.	Student and teacher survey creation	Design tools to assess success	P	9/22	Leadership team
15.	Implement surveys and other data collection, PEAR Assessment Tool	Implement data tools	I	9/22, 1/23, 6/23	Leadership team and teachers

*Section 3: Define Innovation Outcomes & Measure to Assess Outcomes*

A. Identify the outcomes (i.e., student outcomes, changes in instructional practices, changes in student practice) that you expect to see as a result of your innovation.

*Consider both short-term and long-term outcomes, at different points in the time (e.g., at 6 months, 12 months, 2 years and 3+ years).*

Within the first year, we expect to see several outcomes as a result of our innovation:

- We expect to see a larger percentage of our students engaged in integrated units of study which incorporate the outdoors. Currently, high school students are able to select courses that allow them to engage in learning outside. We anticipate extending the offerings to grades 5-8 during the 2022-23 school year.
- We expect to see a decrease in absenteeism. Currently, 41% of our students are considered chronically absent.
- We expect to see a reduction in behavior reports across all grade levels. There were 33 incidents of suspension during the 2022-23 school year.

After the first year of our innovation, we expect the above outcomes to continue, with these additional outcomes:

- We expect to see increased community involvement in our outdoor learning programming as a result of social media, and potentially broader media coverage should the story get picked up with the local news agencies.
- We expect to attract more qualified candidates for open positions at our school.
- We expect to see improved standardized testing scores as a result of increased student engagement.

B. Describe your plan for collecting and reviewing data to assess your innovation outcomes.

*Potential data to collect includes qualitative and quantitative data (e.g., surveys, interviews, focus groups, observations, exit tickets, and on-demand assessment(s) that can be considered.*

	<b>Data Type</b>	<b>Baseline (B) Interim (I) Summative (S)</b>	<b>Frequency of Data Collection</b>	<b>Person(s) Responsible for Collection and Data Quality</b>
1.	Universal Behavioral Screening (BASC-3)	B, S	2 x year	Melissa Lyons-Vitalone and Marcy Melcher - data quality and teacher training  Teachers for data collection at beginning and end of year
2.	NWEA data	B, I, S	3 x year	Teachers
3.	aimsweb data	B, I, S	3 x year	Teachers
4.	Synergy truancy reports	S	End of year	Melissa Lyons-Vitalone
5.	Office referrals	I	Ongoing	James Tyler
6.	NEO behavior reports	S	End of year	Melissa Lyons-Vitalone
7.	NEO attendance data reports	B, I, S	quarterly	Melissa Lyons-Vitalone
8.	MEA science data	S	End of year	Science teachers
9.	Student survey	B, I, S	3 x year	Leadership team and teachers
10.	Teacher survey	B, I, S	3 x year	Leadership team
11.	PEAR Assessment	B, S	2 x year	Leadership team and teachers



- C. Describe how you will **scale and sustain** your innovation, including necessary policy changes, changes in mindsets, capacity-building activities, and **long-term financial sustainability**.

*Consider the systems changes that this innovation will require and promote.*

We have already committed local funds to a full-time teacher to sustain outdoor programming. We have hired four other teachers who will also be teaching outdoor lessons through multi-disciplinary modalities. For example, our PE teacher will conduct a unit on the water and our social studies teacher is teaching wildlife studies which is primarily focused on outdoor learning. RREV funding will allow us to expand our capacity to bring our instruction to the next level. It will support student learning of our identified competencies and lead to changed mindsets about learning in general and an appreciation for the outdoors. We will secure additional local funding in future years to resupply materials such as wood, nails and other consumables to sustain our innovation after the pilot year. Our innovation will also be an essential part of helping to recruit and retain quality personnel as well as strengthening overall curriculum and instruction for students. We have already had applicants for open positions express an interest in our district due to the coverage of outdoor activities highlighted on our website. Teachers will continue to share photos and reports of student participation in outdoor education activities with families on social media and in newsletters to gain further support. Articles will be sent to local newspapers for publication to highlight outdoor learning to increase the public's awareness of the benefits of our initiatives which will hopefully garner more support.

- D. Describe the feasibility review you engaged in during the development of your innovative pilot plan, including which aspects of the plan for the pilot were reviewed, which stakeholders were engaged, feedback received and revisions made to the plan as a result of the feedback.

We collected informal and formal data from conversations with stakeholders at all levels to select priority competency areas. Surveys were disseminated to local businesses and organizations, community members, students, staff, and parents. The top 6 competencies selected from this group were:

Responsibility

Confidence

Communication

Creativity

Problem Solving

Critical Thinking

RREV will allow us to develop effective and engaging learning opportunities which will allow students to improve their performance in relationship to these competencies which will help them be better prepared for post-secondary opportunities and hopefully find a love for science in the process.

Recent student discussions indicate that students have enjoyed learning in an outdoor environment this school year. As reported previously, 74% of students are selecting an outdoor elective as their top three choice.

School administration and facilities staff have committed to allocating time to purchasing, installing, and maintaining outdoor learning environments.

Existing outdoor education teachers are eager to continue and new teachers are eager to participate in outdoor curriculum development to expand incorporation of outdoor education in their classrooms.

The leadership team is committed to continuing outdoor education programming in the long-term as evidenced by the hiring of a full-time outdoor education teacher at the high school level beginning in 2021. We are revising our schedule to allow for opportunities to be expanded to the junior high students for the upcoming school year due to the initial successes seen in the high school population and the eagerness of the junior high students to participate after watching their older peers.

#### Section 4: Identify Key Expenses

- A. Identify the key expenses associated with the preparation, implementation, and ongoing refinement of your pilot.

*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.*

In order to improve engagement and to teach competencies such as responsibility, confidence, problem solving, critical thinking, creativity, communication, and collaboration through marketing, salesmanship, and financial management, etc., we will need to purchase infrastructure, instructional supplies, materials and equipment to operate the programs. We will need to use the funding to purchase the following (estimated costs included):

- Structures for outdoor learning spaces (30,000)
- Heating unit for greenhouse (5,000)
- Water activity equipment (15,000)
- Waterfront lifeguard or swift water rescue certification for staff and students (4,000)
- Greenhouse instructional materials (9,000)
- Outdoor instructional materials for Wildlife Studies (10,000)
- Archery equipment (3,000)
- Tools and equipment for building (20,000)

- Technology for Wildlife Studies (3,000)
- PEAR Assessment (1,000)