

2021-2022 Bureau of Land Management Greening STEM Grants Request for Applications (RFA)





2021-2022 NEEF Greening STEM Grants

Supported by the Bureau of Land Management

Issued by the Bureau of Land Management and the National Environmental Education Foundation

Proposal Due Date: October 31, 2021 at 11:59 pm Central Standard Time

Awardees Announced: January 2022

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In 2020, the National Environmental Education Foundation (NEEF) collaborated with the Bureau of Land Management (BLM) to fund a Greening STEM Demonstration Project. The \$10k sponsorship award supported a holistic STEM program that infused agency science and resources into school curricula focused on student-directed investigations of relevant topics of research, local environmental issues, or problems affecting local public lands. The funding allowed for BLM staff to work alongside formal and nonformal educators to design and deliver STEM programming that engaged youth in place-based learning and environmental monitoring.

The BLM continues to collaborate with NEEF to build the capacity of BLM field sites to use components of NEEF's Greening STEM model (www.neefusa.org/eeweeek/greening-stem) to design and deliver STEM programming. This year, there is \$40,000 available to issue grants ranging from \$5,000 to \$10,000 each for projects during the 2021-2022 academic school year.

Through these BLM Greening STEM grants, BLM and NEEF seek to advance mutual STEM education goals by providing program participants with access to authentic STEM experiences that use the environment and the agency's unique mission—to sustain the health, diversity, and productivity of public lands for the use and enjoyment of present and future generations—as a context for engagement.

Programming funded by these grants will utilize STEM-focused content, instructional strategies, training approaches, and collaboration and dissemination technologies to assist school educators and staff in implementing and enhancing learning in and outside of the classroom, with a primary focus on BLM-related subject matter. Following project completion, all resources and related content developed under these grants will be made available via NEEF's Greening STEM Hub. For examples of successful past projects check out NEEF's collection of project videos and educational resources at www.neefusa.org/education/eeweeek/greening-stem.

This competition is open to all BLM field sites. Proposed projects must be submitted by a BLM point of contact. The proposal must demonstrate active involvement by BLM staff, a school or school district, and a community-based non-profit organization.



Grant Program Priorities

NEEF and BLM aim to increase grantee teams' understanding of how to use STEM learning activities to address environmental challenges, engender stewardship, and forge lasting collaborations between BLM sites and schools by:

- bringing Greening STEM programming that includes citizen science or environmental monitoring activities to middle to high school students;
- building the capacity of BLM and formal and informal educators to offer high quality STEM programming that aligns with state education standards;
- helping schools build a culture that values using the environment as a context for improving student learning and achievement;
- stimulating educational partnerships between the BLM, schools, and community-based organizations that facilitate meaningful place-based learning experiences for students;
- engendering environmental stewardship through a learner-centered approach that encourages authentic problem-solving, collaboration, and leadership in planning and leading a learning expedition in public lands;
- and increasing student interest in STEM content and natural resources careers through opportunities for engagement with BLM science and staff.

Projects must involve working relationships with a school or school district, a community-based nonprofit organization, and a BLM point of contact.

Timeline

Application Process

- Sept 15, 2021 – Online applications open
- Oct 31, 2021 – Grant applications are due
- Nov/Dec, 2021 – Review and grantee selection completed
- Jan, 2022 – Award announcement and distribution of funding

Grantee

- Jan-June, 2022 – Grant performance period
- July 29, 2022 – Grantee final reports due

Application Requirements

The following sections outline what will be expected of applicants. All applications must be submitted using NEEF's [online grants portal](#). If you have applied for a NEEF grant previously, please use your existing account. If in doubt, existing accounts can be **searched for** using a tax ID number (EIN). First time applicants will need to create an account.

Grant applications are due on **October 31, 2021**, by 11:59 PM CST

Eligibility

- Open to all BLM field sites.
 - ***Please note: the BLM field site is the official applicant responsible for the submission of their application, all required documents, and reports.***
 - ***Requires a non-BLM fiscal agent as a project partner***

Greening STEM Project Design Principles:

The Greening STEM Model is an interdisciplinary and collaborative approach to teaching STEM subjects that uses the natural environment and real-world challenges to engage learners and deliver high-quality STEM education. The student's experiences and interests are at the center of learning as they explore STEM content and develop a 21st century skills set. Throughout the experience, students can be tasked with different levels of responsibility from working as a team on a project to planning and leading a learning expedition. By having autonomy to design and explore a question of interest related to local landscapes, students are offered opportunities for authentic problem-solving while making gains in environmental knowledge and fostering a stewardship ethic.

All BLM Greening STEM Projects shall include elements of one or more of the Greening STEM Design Principles. These are: place-based learning, three-dimensional learning, project-based learning, and community-based learning.

- Place-based learning elements: Students are encouraged to explore a topic of study, issue, or problem through direct first-hand experience; collaboration between students interested in the same topic of study, issue, or problem is encouraged; facilitators (BLM Project Lead, partners, educators) serve as connectors to existing ways to involve learners with the topics of interest.
- Three-dimensional learning elements: Exploration of anchoring phenomena encourages students to question assumptions and current understanding; STEM practices are used to motivate problem-solving; exploration of the anchoring phenomena leads to disciplinary core ideas; cross-cutting concepts are used to connect the anchoring phenomena to real world events.
- Project-based learning elements: The learners are intellectually challenged by their project work; the nature of their project engaged learners over the course of days, weeks, or even months; real-world authenticity is simulated by the selection of tools, techniques, and technology used to explore the topic of study, issue, or problem; the students have an opportunity to share their work with audiences beyond their classroom.
- Community-based learning elements: The topic of inquiry is explored within a local cultural context; the learner is encouraged to understand the impacts of power and privilege involved in the topic of inquiry, issue, or problem; the learner is asked to



consider which cultural knowledge sets and traditions are accounted for in the topic of inquiry, as well which are not and the impacts exclusion may have on current understanding of the topic, issue, or problem; students explore the role of equity in solutions that are acceptable for the affected community or communities.

Funding Can Be Requested to Support:

- Staff/personnel costs for partner project team members.
- Directly related travel costs for partner project team members
- Transportation costs for students and youth participants
- Development and printing of training and educational materials (e.g. cost to print field manuals, protocol documents, datasheets, etc.)
- Project-specific supplies and materials (e.g. measurement equipment, tablets, software, etc.)
- Data quality measures/evaluations.
- Costs for professional development for partner staff and educators to learn more about Greening STEM Design Principles (e.g. trainings on place-based learning, three-dimensional learning, project-based learning, and/or community-based learning) and other skill sets germane to execution of the project
- On-site costs (e.g. transportation, portable restrooms)
- Postage/shipping (e.g. costs to mail students educational materials and/or supplies)
- Analysis of samples (e.g. water quality samples sent to a lab)
- Data analysis
- Training in program planning, citizen science or environmental monitoring, and Greening STEM Design Principles (no more than 10% of project budget should support training).
- External project evaluation and evaluation of program impacts on volunteers (e.g., learning, conservation attitudes)
- Other costs – include and we will evaluate

Funding

- Applicants may apply for a total request of \$5,000 - \$10,000. Higher funding requests should demonstrate significant participant engagement and/or project duration.

Required Project Proposal Criteria

Strong applications will include the following:

- Description of the goal of the proposed project.
- Description of the target audience, including grade level(s) and demographics.
- Description of the BLM's plans for collaborating with the partnering school[s] or school district and nonprofit organization around the proposed project.
- Description of gaps in the BLM's existing STEM programs and how the project will address these gaps.



- Description of the citizen science or environmental monitoring project, including what STEM skills students will learn as a result of participating in the project. Please be sure to include:
 - Description of a series of STEM learning activities that will take place during the program.
 - Description of one or more of the pre-field activities that will prepare students for one or more field experiences to be followed by two or more post-field activities.
 - At least one pre-field activity must include a visit (virtual or in-person) to the participating school[s] from a BLM representative.
 - Field-based activities must include one or more visits to the BLM site to participate in data collection as part of a citizen science or environmental monitoring project.
 - One of the two or more post-field activities must involve data analysis. Another activity needs to include some type of presentation of the project findings.
- Description demonstrates a commitment to Greening STEM Design Principles.
- Optional: Projects may involve classroom activities, out-of-school programs, and after-school programs.
 - Please note: Out-of-school and after-school programs must involve a teacher from the participating school[s], preferably a science teacher, who can steward the Greening STEM project within the school, and champion its practices beyond the scope of the funding. For example: a science teacher who runs an afterschool eco-club or a teacher who offers academic-preparedness and leadership classes afterschool in which students explore social or environmental justice issues.
- Proposed projects must include the following partners:
 - Bureau of Land Management: Please note that all projects must have a BLM lead. The BLM lead must be involved in the application for the award and the coordination of project activities.
 - Nonprofit Organization working at the community level: May receive and manage funds, as well as provide assistance and support for project activities.
 - School or School District: Projects must work with middle or high school students. Applications are required to provide a current letter of commitment from the participating school or school district. School districts may receive and manage funds.
- Each project partner must provide the name of a project lead that will be the primary contact person for the project.
 - Please note: The BLM Project Lead is the official applicant responsible for the submission of their application, all required documents, and reports.
- A strong preference will be given to projects that:
 - Involve one or more science educators in the participating school[s].
 - Engage schools or school districts in underserved communities.



Grantee Process

The following sections outline what will be expected of those who have successfully applied and have been selected as grantees.

Grant Awards Process

Funding for this grant will be distributed as a single payment, unless otherwise stipulated in the funding agreement.

Site Visits

NEEF will conduct virtual or in-person site visits during the grant period. These visits will be used as part of the evaluation process.

Targeted Project Outcomes

NEEF will be evaluating projects based on the following educator/staff and student participant outcomes:

- Educators/staff and students demonstrate understanding of STEM concepts, the scientific inquiry and environmental monitoring processes, and their applications
- Educators/staff demonstrate confidence in the ability to lead environmental monitoring and citizen science activities/discussions
- Students demonstrate confidence in their ability to participate in environmental monitoring and citizen science activities/discussions
- Students demonstrate interest in pursuing or participating in classes, activities or discussions related to general STEM and/or environmental science
- Students demonstrate motivation to pursue additional STEM-related classes, activities and/or careers

Application Assistance

All applications must be submitted through our [online system](#). If you have any questions related to the funding opportunity, please consult our Grant FAQ page. For all other questions or problems, please contact us at grantsadmin@neefusa.org. Please type "BLM Greening STEM Grant" in the subject line of your email.