

**Engineering Pathways Project Application**

**Pathway Project Description**

Beyond School Bells is excited to offer support for the creation of engineering learning pathway in afterschool and summer (ELO) programs across Nebraska. The purpose is to increase engineering mindsets and skillsets of students through hands-on, fun, design-build activities, and to raise engineering educational and career awareness across greater NE for students and their families, with special attention to diversifying the engineering workforce to include more women and underserved populations.

The goal is to create a developmentally appropriate pathway connecting elementary (EL) and middle school (MS) ELO club experiences with other engineering learning experiences in their communities and building out a strong cohort of high school (HS) club facilitators, who in turn will become candidates for the PKF scholarship (see below), other educational opportunities including career academies where applicable, and careers in engineering related fields.

The aim is for HS facilitators to lead engaging, hands-on activities for the EL and MS youth, and will themselves be engaging in learning opportunities as college students or STEM professionals zoom in to provide larger context and mentoring. HS students will be supported by BSB staff, the ELO leaders in their communities, will receive training via UNL Extension and will have opportunities to connect with engineering programs at UNL / UNO.

**Curriculum Options**

BSB’ [Mission to Mars (M2M)](https://sites.google.com/view/missiontomars2/m2m-2-0) and/or [GoldieBlox](https://goldieblox.com/pages/camp-goldieblox) curricula may be used for club experiences. These collections are designed around the engineering mindset and provide hands-on learning design-build experiences structured for fun, engaged, and excited learning.

Staff can:

1) Use a pre-sequenced curricula package created by 4H/Extension (contact BSB for access);

2) Select lessons from the M2M and/or GoldieBlox collections;

3) or use other high-quality engineering lessons they are familiar with.

In partnership with NE 4H/Extension, BSB will provide 2-3 required activities to add into the mix at the start, middle, and end of the experiences. These will be designed to build engineering identity and connect activities to educational and career pathways. In communities with BSB’ TMC labs, we hope TMCs will be utilized in the experiences where possible.

***Summer 2024***

For the summer, we suggest two-week, daily one-hour, engineering-camp style experiences, or at least 10-hours of engineering-related programming connected to M2M, GoldieBlox, or another approved program; programs have the flexibility to adapt the structure to their local context.

* Programs continuing the project into the school year should raise awareness during the summer to connect students and families to the school year pathway club experience through flyers and the culminating family engagement event (see infographic for event details).

***2024-2025 School year***

The school year project will build on lessons learned during the summer (if applicable) and start activities in the fall that continue throughout the 2024-25 school year.

* Ideally, programs will offer both elementary and middle school level clubs in the fall *and* spring semesters.

There may be fully-funded opportunities for HS club facilitators to attend a Summer UNL/UNO Engineering recruitment program to see/learn about the program their work was linked with.

**General Information and Acknowledgement of Requirements Section**

Name of Program/Site:

Name of Program Director:

Email address:

Phone:

Date:

Please check the grant level you are applying for:

Summer only

Summer and 2024-2025 school year

2024-2025 School year only

*Engineering Pathway Project Specifications*

**Please acknowledge commitment to each of the requirements** by checking the relevant boxes below:

The afterschool program commits to building a pathway of experiences that spans across elementary, middle, and high school.

The afterschool program commits to participating in a learning community around this work, including quarterly online learning and sharing sessions.

Staff will create materials such as flyers that outline the pathway of experiences across grade levels for students and families to highlight next steps and make connections as students graduate through grade levels.

Staff will become familiar with the [Peter Kiewit Foundation (PKF) Engineering Academy](https://engineering.unl.edu/pkf-engineering-academy/) and the [annual scholarships through the PKF Engineering program](https://engineering.unl.edu/pkf-engineering-academy/future-scholars/), and other engineering-related opportunities in order to raise student and family

awareness around them.

All genders are welcome; staff will put effort into **recruiting similar numbers of male and female students**.

Family events will be held near the end of each club with meals where student projects will be showcased and the **program pathway’s next steps**, the **PKF scholarship**, and other educational opportunities (such as career academies where locally applicable) will be shared with families.

Student and HS club facilitator surveys (provided by BSB) will be administered on or near the second to last club meeting for each club experience – ice cream or other treats can be purchased for students on survey days.

Grant progress (narrative) and expenditure reports will be submitted before or by agreed upon dates.

**Please tell us about the staff members you expect to participate in this project** if your program is selected**.** The goal is to engage 2-4 high school students to each elementary and middle school club with the support ELO leaders/afterschool staff and remote college students.

A. Please describe the staffing structure you plan to use for this project:

B. How many HS students will you be able to engage to lead each club?

C. Where will you recruit HS students from?

A. If you cannot commit to an above requirement but still wish to apply, please explain why and tell us about your planned alternative:

# Acknowledgement

I commit to the above requirements if this application is awarded an Engineering Pathway grant.

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# Application Questions:

1. Please provide the following information:
   1. Grade level(s) grant will serve:
   2. Approx. enrollment number grant will impact at each grade level:
2. What experience level would you say your program is at with building educational pathway experiences?

Beginning (early learning phase)

Intermediate (some developed practices, but would like to grow)

Advanced (highly experienced, very comfortable in current practices)

1. What is your program’s greatest need in terms of this project?
2. Do you have any additional ideas/innovations you would like to propose as part of your grant contract?
3. Please briefly describe the curriculum you plan to use for each season you are applying for (e.g., summer, fall, and/or spring).
4. Please enter approximate programming dates for each season you are applying for (e.g., summer, fall, and/or spring).
5. Please list three goals you have for this grant:

Goal 1:

Goal 2:

Goal 3:

**Summer Budget Information**

Guide/Example for Summer: An approximately 10-hour program with an equal number of planning hours for the HS youth would equal 20 hours for youth program leaders, @ $20 = $400 each HS student or $800 per club. We recommend a $500 stipend for the adult supervisors, $500 per school for start-up supplies and $500 per school for a culminating family engagement event.

Total per summer club = $2300

**Total Budget per site for summer** up to $4600 = $2300 for EL club + $2300 for MS club

**2023-23 School Year Budget Information**

Guide/Example for School Year: Given the longer duration and added elements, staff can budget school year clubs for up to $2,500 per club, per semester. Note - Some repeat clubs would not have the same start up supply costs but those savings may be offset by adding cost of backpacks (estimated at $200 per set) or other options which could be used between grade levels. We would also recommend more support for deeper interactivity with college student mentors.

Total per fall club = $2500

**Total Budget per site for school year** up to $10,000 = $5000 for fall and spring EL clubs + $5000 for fall and spring MS clubs

1. What is the total grant amount you are applying for?
   1. If you’re applying for **both summer and school year** pathway experiences, you can request a budget of **up to $14,600** for summer + school year clubs.
2. Please provide a general budget (ex. Supplies for clubs, club family engagement events, programming outreach, staff and student stipends, etc.).

Send completed applications with general budget proposals to Dakota Staggs [dstaggs@nebraskachildren.org](mailto:dstaggs@nebraskachildren.org) and Alison O’Toole [aotoole@nebraskachildren.org](mailto:aotoole@nebraskachildren.org)