

**APPLICATION DEADLINE: Monday, March 12, 2012 at 5:00 pm**  
**Email to kathleen\_sheehy@brookline.k12.ma.us**  
**Mail or hand-deliver to BEF, 40 Webster Place, Brookline, MA 02445**

**BROOKLINE EDUCATION FOUNDATION**  
**Teacher Grant Application for 2012-2013 Academic Year**  
**Cover Page**

**APPLICATION MUST BE TYPED**

**Project Title**

Reaching All Students through STEM and the Arts

Name of Applicant(s)

Min-Jen Taylor

School and grades/subjects you teach

BEEP PreK @ Heath

Home Telephone Number(s)

617-650-0981

Email Address(es)

min-jen\_taylor@brookline.k12.ma.us

Years teaching in PSB,

total years teaching

8 years in PSB,

16

Amount Requested

2490

Are you applying for the Charlie Baker Legacy Award?

NO

Please list previous BEF grants (year, title, teacher/collaborative)

2010, Promoting Inquiry Based Science in Early

Childhood Education

/Collaborative Grant

I understand that, should the Brookline Education Foundation fund my grant application, I am obligated to submit a written evaluation of my project at its completion. Evaluations of projects completed during the summer will be due by December 31, 2012. Evaluations of projects completed during the school year will be due by May 31, 2013. I further understand that only educators employed by the Brookline Public Schools at the time the project is undertaken are eligible to receive funds.

Acknowledgement of Applicant(s): Min-Jen Taylor  
March 12, 2012

Date:

For online submissions, please acknowledge that you have read and agreed to the above statement.   X

**BROOKLINE EDUCATION FOUNDATION**  
Teacher Grant Application for 2012-2013 Academic Year  
Project Description Section

**1. Project Summary** (1-3 sentences)

**I will attend a series of the STEAM (Science, Technology, Engineering, Math, Art) seminars hosted by City Technology at City College of New York in New York from August 2012 to May 2013 to develop a better understanding of the content knowledge and professional skills of the interdisciplinary, inquiry-based STEAM education approach and to foster all young children's critical thinking to spur innovation.**

• **Goal Statement**

What are your explicit goals for the project? What would be the best outcome for the work you propose?

This project is to strategize innovative ways to provide an equal access to education for all the children and fuse the fields of science, technology, engineering, math and art. In addition, it is to promote a transformative practice in education that prepares young children to reach their intellectual and creative potentials and to invent the future. In particular, the goals of this project are:

- to deepen my understanding of the STEAM pedagogy
- to collaborate with scientists, engineers, artists and early childhood science teachers to expand the repertoire of the science education (physics, engineering)
- to create a interdisciplinary curriculum that applies the STEAM education to promote critical thinking and to prepare for future innovations.
- to design a learning environment that stimulates young children to explore and experiment through art practice

**3. Context**

a. What experiences or needs have led you to apply for this grant?

Many mini project-based science activities for young children were presented at the National Science Teacher Association annual conference that I attended last year. There were few workshops that integrated science with literacy, math and art. One of the two most influential workshops that changed my teaching practice was designed

specifically for prekindergarteners and kindergarteners by City College of New York faculty and a prek/k science teacher. We had a comprehensive conversation in depth about their philosophy and approach – to promote and support teaching STEM education starting at the earlier age (science, technology, engineering and math). This expanded my perspective of the science curriculum and stoked my interests in deepening my knowledge and skills of STEM. After discussing with Vicki Milstein, the principal of early education program, and Janet MacNeil, PreK-8 science coordinator and with their encouragement, I have integrated literacy and math in the science curriculum and proposed questions that encourage my students to explore and investigate. In the mean time, City Technology has bridged STEM and ART to STEAM and hosted seminars regularly with their current members by invitation only. The director invited me to take part in their seminar to advocate the use of inquiry and to reform education that encourages interdisciplinary thinking. This opportunity motivates me to engage in professional learning to strengthen my teaching and learning.

b. How have your education, training, and/or classroom experiences prompted the interest or need for this project?

After the NSTA annual conference and several science workshops hosted by Janet MacNeil, I have applied the elements of my learning in the classroom and provided children with opportunities that encompass math, literacy, science and physics to promote problem solving and critical thinking. There is more emphasis on the life science with the integration of math and literacy in my classroom and not enough physics or engineering. I felt the need to broaden my science pedagogy to ensure foundation knowledge and skill in interdisciplinary thinking and expand my repertoire of creating an integrated curriculum.

#### **4. Project Description**

Describe the structure of this grant. What is your time frame? When and where will you be working? With whom will you work? You may include copies of supporting material (e.g., conference brochure, tour itinerary).

**The project will consist of approximately 6 sessions of the STEAM education seminar, an interdisciplinary approach that integrates science, technology, engineering, arts and math, at City College of New York in New York from August 2012 to May 2013. The seminar is led by Gary Benenson, professor of mechanic engineering, and Jim Neujahr recently retired professor of science education at City College of New York. This seminar is by invitation only. <http://www.citytechnology.org/> It enables**

**me to collaborate with engineer and physics scientist and four other early childhood science teachers from New York Public Schools.**

## **5. Impact**

Describe as specifically as possible the impact of the work you propose:

- On Yourself - How do you expect this project will change you as an educator? How might these work impact future professional activities?

I expect to build upon and enhance the ongoing inquiry based science and town wide literacy collaborative initiatives, deepen my understanding of the STEAM education, expand my content knowledge and teaching skills of physics and engineering and implement it in my classroom.

- On Your Colleagues - What impact will your project have on your professional community either directly or indirectly?

This project will provide opportunities for my colleagues with additional science resources as a result of formal and informal sharing such as staff meeting, class website, conference email.

- On Your Students - How will your students benefit from this project in the short or long term?

In the short term, all students with different needs will have an equal access to education. Each student will learn to view situations from different perspectives and be encouraged to ask questions, solve problems, discover and explore through art, the subject at hand. In the long term, students will gain valuable skills in the construction of art, critical thinking, ethics, aesthetics, techniques and style within the practice of STEAM which can lend itself to innovations in the future.

## **6. Evaluation and Dissemination**

How will you evaluate the success of the project? For example, will you create a before and after study, conduct a survey, collect and examine work products, engage in peer observation, write personal reflections, solicit feedback from colleagues and/or parents, or design some other form of evaluation of your project?

I will assess the effectiveness of the project in the following ways:

- I will share the elements of my new learning and created resources around new curriculum projects with colleagues, families and administrators formally and informally (email, newsletters, conferences, classroom website, meetings).
- I will collect and examine students' work samples before and after this project initiative.
- I will solicit feedback from colleagues and families regarding the student's learning that occurs implementing the STEAM education.

**BROOKLINE EDUCATION FOUNDATION**  
 Teacher Grant Application for 2012-2013 Academic Year  
 Budget and Finances Section

**Expense  
 Purpose  
 Cost**

Consultant

0

Materials and Supplies

0

Travel\*

Hotel 255/night (including room and board)

Transportation 160 /trip

255x6=1530

160x6=960

Conference Fee

0

Other

0

Substitutes\*\*(please indicate days/hours needed; might be part of total cost)

0

TOTAL

2490

**\* Single rooms are acceptable if preferred by the applicant.**

**\*\*The BEF's ability to pay for subs is limited; requests will be considered on a case-by-case basis.**

Please be as specific as possible.

#### Finances

a. Will there be additional funding from other sources? Please describe.

NO. There will not be any additional funding from other sources

b. Are resources needed to continue the work of the project after the Brookline Education Foundation funding ends? If yes, please describe how these resources will be obtained. If no, please describe how the work of the project will be funded or continued after completion of funding by the Brookline Education Foundation.

NO. After completing the series of seminars, I expect to feel more confident and comfortable exchanging ideas and thoughts regarding STEAM with the early childhood science educators in New York via emails to refine my integrated curriculum. I will also solicit feedback from my colleagues and administrators, Janet and Vicki.

c. Do you foresee any potential challenges /obstacles and, if so, what is your strategy for dealing with them should they occur?

NO.

d. Will you be able to complete the project if only partial funding is available? NO

If only partial funding is available, would you be able to redesign the project?

Please explain:

No. If I am not able to attend the seminars, it will not diminish my passion for interdisciplinary STEAM education. Education in the subjects of engineering, technology and physics does not usually start at young age. This is the first opportunity for me to collaborate directly with the certified and highly qualified early childhood science educators in fostering interdisciplinary thinking through science curriculum. I hope to further my understanding and broaden my science repertoire by engaging in professional learning directly with early childhood science educators who specializes in physics and engineering.

e. For groups of three or more educators applying together: If the BEF can fund only a subset of your group,

is there a reason this would pose a problem for you? \_\_\_Yes \_\_\_No

Please explain:

f. If you are applying for the Charlie Baker Legacy Award (fully described in the Call for Proposals), please indicate how the additional \$1,000 would extend and/or enrich your project. Please limit your response to one page.

NO