

Jeanie Ritchie Grants - Funded by MPAEF

Application must be submitted no later than 10/14/22 for consideration.

| Jeanie Ritchie Grant Application 2022-23 | |
|---|---|
| Project Title: | When Does Your Bridge Break? |
| Lead Teacher/School Project Director Name: | Sara Bartlett/Oak Knoll Elementary |
| Email Address: | sbartlett@mpcsd.org |
| Best Phone Number: | (650) 464-7638 |
| Names of Other Teacher Participants and contact emails for all (also include school if project will span multiple campuses): | Joyce Chan Andrea Boatright Cheng Steffany Cressey Alison Howard |
| Principal's Name: | Alicia Payton-Miyazaki |
| Director of Technology Name: (if applicable) | |

Before this application is submitted, it is necessary for the principal to review it.

Has the review been completed? Yes No

Principal Signature / Date: Alicia Payton-Miyazaki 10/14/22

I have reviewed this proposal and am aware that it is being proposed for implementation and will be supported through the Technology Department.

Director of Technology Signature/Date: _____

PLEASE NOTE: The Jeanie Ritchie grant process is anonymous. Your application will be considered according to an ID number only. Please do not include the name of your school in the body of your application. This title page will not be made available to the committee until the grants are awarded.

| | |
|---|--------------------------------------|
| Project Title: When Does Your Bridge Break? | |
| | Type of Grant (check all that apply) |

Jeanie Ritchie Grants - Funded by MPAEF

| | |
|---|---|
| <p>This year, JRG will reserve \$20k for grants focusing on SEL/Mental Health. Please check box if grant fits this category.</p> | <p><input checked="" type="checkbox"/> New <input type="checkbox"/> Repeat (____ # years) <input type="checkbox"/> Technology Support Approved <input type="checkbox"/> Mental Health/SEL</p> |
| <p>Cost per student this year \$2.33</p> | <p># Students involved: 100 2nd graders, 100 secondary grade level students # Schools involved: Oak Knoll Grades involved: Second Grade</p> |
| <p>Total Funding Requested* \$465.14</p> | <p>Date(s) when will the project be conducted: This set of experiments will first be undertaken in December 2022</p> |
| Project Description | |
| <p>1. Goals: What are the goals of the project? What are you trying to teach? <i>Please limit your response to one paragraph and be concise.</i></p> <p>Inspired by Curiodyssey’s Traveling Field Trip “Build It, or Break It!” The second grade teachers at Oak Knoll responded, “We can do something even better, for a lot less money!” So, we figured out how to store all the parts in the STEAM Lab, as well as open this opportunity to far more students. This set of experiments lends itself nicely to being repeated in multiple grade levels; each time students will challenge themselves to build stronger bridges and strengthen their understanding of physics. Loud, fun, hands-on learning!</p> | |
| <p>2. Core Activities: Describe what students will <u>do</u> as they participate in the project. How will the project accomplish its goals?</p> <p>Students will use limited and specific amounts of: masking tape (3 feet), 10 popsicle sticks, and 3 tongue depressors to create the strongest bridge possible. They then secure the string, holding the gallon paint can, and fill it with rocks. The amount of rocks in the paint can grows until the bridge breaks. Crash!</p> <p>Then the raucous good times get even better... the student weighs the can, records that data on the class whiteboard and goes back to do it again-design, reconstruct, and test. Iteration after iteration for approximately twenty minutes, followed by a teacher-led analysis of what just happened.</p> <p>This enhances the Twig Unit 2, Module 5 lesson. This also aligns with the next generation science content standards...</p> | |
| <p>3. Innovation: To what standards and/or aspects of the curriculum is the project linked? In what ways does it go above and beyond what is normally required?</p> <p>Physical Science</p> <p>1. The motion of objects can be observed and measured. As a basis for understanding this concept:</p> <p>1.c. Students know the way to change how something is moving is by giving it a push or a pull. 1d. The size of the change is related to the strength, or the amount of force, or the push or pull. 1.e. Students know objects fall to the ground unless something holds them up.</p> <p>Investigation and Experimentation</p> | |

Jeanie Ritchie Grants - Funded by MPAEF

4. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

- 4.a. Make predictions based on observed patterns and not random guessing.
- 4.b. Measure length, weight, temperature, and liquid volume with appropriate tools and express those measurements in standard metric system units.
- 4.d. Write or draw descriptions of a sequence of steps, events, and observations.
- 4.g. Follow oral instructions for a scientific investigation.

4. Success Evaluation:

a. If this is a new grant, how will you know that the program has been successful? The frequency with which the equipment gets used will determine whether students are engaged in this hands-on science. The written feedback from students of all ages as they make a scientific record of this set of experiments. When second graders are asked to think back to when we built bridges to break bridges they will give oral feedback that is evaluative in nature. Teacher feedback during collaboration times will help colleagues facilitate this experiment with older and younger students.

5. Detailed Budget: Include all expenses, e.g., sales tax, shipping, etc. If any materials can be re-used in future years, please indicate this in the information provided.

Item

| | | | |
|--|------------------|------------------------|-----------------|
| Gallon Paint Cans with Handles | Gray's Paints MP | 25 | \$99.75 |
| River Rocks | Lyngso | 2 bags | \$60.00 |
| Metal Sawhorses | Amazon | 3 | \$74.94 |
| Large Platform Baking Scale >22lbs. | Amazon | 2 | \$79.98 |
| Ladder | Amazon | 1 | \$135.99 |
| Velcro Straps | Amazon | 1 | 16.87 |
| sticks big and small and masking tape | Amazon | 2,000 sticks & 9 rolls | \$55.07 |
| items already secured: rope, string, buckets for rocks, painters tape to mark width between rails on design tables | 10% tax | \$42.29 | \$422.85 |
| | | TOTAL | \$465.14 |

Please click on [this link](#) if these descriptions leave you wondering about details, or you like to see more visuals and details.

*Every item can be re used, except for some broken sticks and tape.

Jeanie Ritchie Grants - Funded by MPAEF

* Currently there is no limit on the amount a grant application can request; however, any application requesting \$3000+ is expected to reach a large number of students and should include ample description and explanation of finances.

Final applications must be emailed to jeanieritchiegrants@mpaef.org as Google Docs with a clear subject line.

Any questions or comments? Please reach out to us at Jeanieritchiegrants@mpaef.org.

Thank you for submitting a Jeanie Ritchie Grant Application!