

FRANKLIN EDUCATIONAL FOUNDATION
GRANT APPLICATION

PROJECT NAME Probes for 7th Grade Science Force + Motion Safety Unit

LEAD APPLICANT NAME Mary Fassbender

SCHOOL /
LOCATION Forest Park Middle School - Science

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CO-APPLICANT NAMES & SCHOOLS Jen Lemberger
Alyssa Joetz } 7th grade Science Teachers

AMOUNT REQUESTED \$13,065

ADDITIONAL FUNDING SOURCE(S) SECURED & AMOUNT(S) _____

LEAD APPLICANT SIGNATURE

Mary K Fassbender

PRINCIPAL SIGNATURE

[Signature]

FEF office use only

Date received _____

Was / Was not approved

Placed on _____ agenda

Applicant informed on _____

GRANT APPLICATION

BUDGET

EXPENSE	AMOUNT
Pocketlab Class set of 1 Voyager with Case	\$ 1480.00
10 Silicon Protectors for Voyager	\$ 100.00
Vernier Go Direct Force Acceleration	\$ 99 x 5 = \$495
Vernier Go Direct Force Probe	\$ 99 x 5 = \$495

=TOTAL AMOUNT REQUESTED \$ 3065.00

PLEASE ATTACH A DESCRIPTION OF YOUR PROJECT. IN ADDITION TO A NARRATIVE DESCRIPTION OF NO MORE THAN 500 WORDS, BE SURE TO ADDRESS:

- YOUR PROJECT'S OBJECTIVES
- HOW YOUR PROJECT FITS WITHIN DISTRICT OBJECTIVES, GOALS & STANDARDS
- THE PROJECT'S POTENTIAL LONG-TERM EFFECT, INCLUDING TARGET AUDIENCE
- HOW YOU WILL MEASURE YOUR PROJECT'S SUCCESS AT MEETING ITS OBJECTIVES

Your completed application and materials can be sent or delivered to:

Franklin Educational Foundation
8255 W. Forest Hill Ave.
Franklin, WI 53132

Email questions to: foundation@franklin.k12.wi.us
Or, call 414-525-7650

Probes for 7th Grade Science Force and Motion Safety Project

Part of the 7th grade science curriculum is a unit on Force & Motion. Students learn about Newton's 3 Laws of Motion, speed, velocity, acceleration, gravity, and friction. They also learn how to design a valid experiment, support their claims with evidence from their experiments, and make design changes to their safety device based on data from their experiments. Students apply their knowledge of force and motion to their safety project in which they choose something in their everyday lives (helmet, lockers, playground equipment, etc.) to make safer. This is a STEM based project in that students work in groups to design a prototype that incorporates their knowledge of force and motion. They design a way to test their design and gather data. They use this data to make improvements on their design. This project meets the following science standards:

- Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.
- Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into new solution to better meet the criteria for success.
- Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.

We are asking for the FEF to providing funding to purchase force probes that students could use to gather accurate mathematical data about their prototypes. These probes will give students the opportunity to apply math and data analysis skills in a meaningful way. Without these probes, students would have to come up with creative ways test their prototypes and gather some type of quantitative data. For example, a group measured the effectiveness of their newly designed helmet by how many eggs broke inside it when different amounts of force was applied. These probes would give students the ability to measure the exact amount of force and observe changes in the prototype. These will be used by the entire 7th grade, approximately 350 students. They will be used each year for this project, but some have other capabilities and can be used in other units (in other grade levels) such as weather, pressure, altitude, magnetism, etc. (See chart below)

	PocketLab One	PocketLab Weather	PocketLab Voyager
Acceleration	●		●
Angular Velocity	●		●
Magnetic Field	●		●
Rangefinder			●
Altitude	●	●	●
Pressure	●	●	●
Ambient Temperature	●	●	●
Temp. Probe (Optional)		●	●
Humidity		●	●
Light		●	●
Dew Point		●	●
Heat Index		●	●
Bluetooth	●	●	●
On-Board Memory		●	●

We will measure project's success through the students' ability to use the data they generate with the probes to defend the effectiveness of their prototype in keeping people safe.