

# Energy Variation in Earth Systems

*Mini Grant Application: Fall 2024*

## Application Form

### **Project Description**

#### **Grant Name:\***

This will be used to describe your project on our website, in newsletters, and to potential donors. If possible, it should be brief, informative, and even fun. Some examples:

Math and Reading Tools for Independent Kindergarteners

Engineering Lab Supplies: Building a Moon Colony!

AP Pre-Calculus Support

EXPLOSIONS

Clean It Up with Chemistry

Energy Variation in Earth Systems

#### **Brief Project Description:\***

In 40 words or less, please provide a description of your project. This may be used to share your project with the public as well, so please refrain from using technical jargon.

Digital infrared thermometers will be used by student scientists to collect accurate, fast data in a wide variety of earth systems from both indoor controlled experiments and outdoor studies monitoring change in natural settings and ecosystems.

#### **Project Justification:\***

Provide a project narrative that includes a justification specifying the purpose and anticipated impact of the funding. How will the project enrich student opportunities?

If you are requesting funds to sustain a previous grant request, please let us know why the funds are needed or remind us about the previous success of the grant.

Our science standards include 8 Science and Engineering Practices that students are working toward as part of their science education. Planning and carrying out investigations, analyzing and interpreting data, and using mathematics and computational thinking are all included in this list.

"Engaging in the practices of science helps students understand how scientific knowledge develops; such direct involvement gives them an appreciation of the wide range of approaches that are used to investigate, model, and explain the world." (NRC Framework 2012, pp. 42) In support of the practices it is essential to provide students with the opportunity to collect reliable, authentic data directed by their own questions and inquiries. Energy transfer is a fundamental concept that crosses multiple disciplinary boundaries including biology, earth science, chemistry and physics. Infrared digital thermometers are user friendly and durable and can be used in a variety of settings both in the laboratory, or as part of field work in ecosystems and landscapes. These thermometers can be particularly useful for investigations related to energy and climate, measuring variation in different earth surfaces as they absorb and release energy and the distribution of earth's heat related to snow cover, or urban heat islands. "The actual doing of science or engineering can also pique students' curiosity, capture their interest, and motivate their continued study; the insights thus gained help them recognize that the work of scientists and engineers is a creative endeavor—one that has deeply affected the world they live in. Students may then recognize that science and engineering can contribute to meeting many of the major challenges that confront society today, such as generating sufficient energy,

preventing and treating disease, maintaining supplies of fresh water and food, and addressing climate change.  
" (NRC Framework 2012, pp. 43)

## ***Financials***

### **Amount requested (up to \$300):\***

\$245.88

### **Project Budget\***

Please submit a detailed project budget. This ***must*** include the item, vendor, quantity of items needed, the item cost, any associated shipping costs, total for each item, and total cost for the project. Total amount requested may not exceed \$300.

Energy Variations in Earth Systems.pdf

### **Additional Funding Available (optional):**

If your total budget is greater than \$300, please explain how you plan to secure additional funding.

## ***Population Served***

### **How many students will be impacted by your grant in the 2023/2024 school year:\***

250

### **Grade level(s) impacted in the 2024/2025 school year:\***

9th Grade  
10th Grade  
11th Grade  
12th Grade

### **Subject Area:\***

Earth Science

### **Subject area for reporting purposes:\***

STEM

### **School(s) impacted:\***

■

### **Number of collaborators, if any:**

### **Collaborator Names:**

Please list any other collaborators in this project, including school, grade and/or subject. Ex. Rankin, Callie Smith, Second Grade

## ***Internal Questions***

**Applicant received funding in the last two years\***

No

## **File Attachment Summary**

### ***Applicant File Uploads***

- Energy Variations in Earth Systems.pdf

## Energy Variations in Earth Systems

Item	Vendor	Qty	Price ea	Total
------	--------	-----	-------------	-------

Infrared Thermometer Laser Temperature gun	Amazon	12	18.99	\$227.88
Energizer AA batteries (32 count)	Amazon	1	18.00	\$18.00
Shipping			0	0
Project total				\$245.88



**Etekcity Infrared Thermometer Laser Temperature Gun 774, Digital IR Meat Thermometer for Cooking, Candy, Food, Pi...**

**\$18.99**

**#1 Best Seller** in Infrared Thermometers

In Stock

FREE delivery **Sat, Aug 17** for Prime members

FREE Returns

This is a gift [Learn more](#)

Style: Advanced

Color: Black Yellow