



2018-19 Duke Energy Foundation STEM Grant

DEADLINE October 18, 2018 4:00 pm Foundation Office via Jackrabbit or Email

- This Classroom Grant is for 2018-2019 school year.
- Funds must be used to address a STEM related project.
- All funds must be used by May 1, 2019. A final program evaluation must be submitted by May 15, 2019.

Contact Information	
Applicant Name: Caryn Long, Ph.D.	Position: 5th grade science educator
School: Treadway Elementary School	
Address: 10619 Treadway School Rd Leesburg, FL 34788	
Phone: (352) 742-2291	Fax: 352/742-8343
Email Address: longc1@lake.k12.fl.us	

Detailed Project Information
Project Title: 5th grade in the clouds
What priority area(s) will your project address: Science and Technology
What is your estimated start date: 8-30-2018
Estimated number of teachers who will participate in this project: 7
Estimated Number of Total Students Impacted by project: 170
Grade Levels to be Addressed: 5th grade

Program Background:
 The NASA GLOBE program is a long standing student ground truth effort for students to verify common weather phenomenon with satellite overpasses for NASA scientists. My background working at NASA education allows me a backdoor access to the scientists behind this program.

Project Summary:
 Students have been trained in how to identify cloud types and take photographs of their observations to submit to NASA scientists each day. These "ground truth" observations are compared with satellite overpasses with satellite pictures sent to the students to show what they "see" compared to what these junior researchers have observed. With our position near three airports (Leesburg, Orlando, and Sanford) we have been designated as one of four schools in the world to do an extension of this project on contrails. Students also notify NASA when planes are overhead in their observation field and identify them using a free app called flightradar24 naming the craft, its altitude and its degree of travel and whether or not it is forming a contrail. Students also identify the type of contrail that they see. This is important research because these man made cloud contribute to climate changes and the researchers at NASA Langley Research Center; a center that focuses not only on atmospheric science but also aerospace science will be using this information to identify the planes and at what altitudes they are creating these man-made clouds to design improved planes that would reduce this activity. Students are doing real world systematic observations, an important scientific skill and using technology to report their observations.

Need:

In order to be more effective we need tablets for each classroom to conduct their observations and at least one tablet per classroom that can connect with the internet via satellite. This is critical for the contrail participation so we can identify the airplanes passing overhead accurately.

Project Goals and Objectives: Students will be able to:

- identify the type of scientific investigation they are participating in. (systematic observation)
- apply the steps of the water cycle and know that they are not sequential
- identify how clouds affect the climate of an area
- identify various cloud types by their altitude and shape and make predictions about weather patterns based on their observations
- conduct accurate observations and report them to NASA scientists
- compare ground truth observations to satellite evidence for accuracy

Evaluation Plan: *Describe how you will measure outcomes and evaluate your project.*

Both qualitative and quantitative measurements will be taken. We will record the number of observations throughout the year. (quantitative) Atmospheric scientists will meet periodically with the students to deepen their understanding. Learning outcomes will be measured by the quality of their observations (accuracy) (qualitative) and through quizzes and tests from our science textbook series, benchmark testing and Science Bootcamp practice (quantitative).

Budget				
Category of Expenditure		Dollar Amount		Related Activity
Computer Hardware				
Computer Software				
Other Equipment (not computers)		\$1100		Flight radar 24 - contrail tracking wi-fi and cellular access (2 ipad minis) Wifi only access ipad mini for GLOBE cloud observation (3 ipad minis)
		\$1200		
Competition Registration Fees				
Program supplies				
TOTALS		\$3300		

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Program Approved By: Amy Christides
Principal

Funds Payable to: Treadway Elementary School Fifth Grade
Address: 10619 Treadway School Rd Leesburg, FL 34788

Phone: (352) 742-2291 Email: longcl@lake.k12.fl.us

Requesting party has read and agrees with the funding policies of the Educational Foundation.

Signed Caryn Long, Ph.D. Date 9-10-2018
To be completed by foundation staff/board

Program meets Duke Energy Foundation's Mission/ Funding Policy Y N

Director Recommendation: _____

Executive Board Recommendation: _____