



2018-19 Duke Energy Foundation STEM Grant

DEADLINE March 15, 2019 4:00 pm Foundation Office via Jackrabbit or Email
(weidnerg@lake.k12.fl.us)

- 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.
- Requires signature of principal and requesting party

Contact Information	
Applicant Name: Samyra Safraoui	Position: High School Biology Teacher
School: East Ridge High School	
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Detailed Project Information
Project Title: Rat Dissection Program
What priority area(s) will your project address: Hands-on, authentic STEM lab experience/ Mammalian Anatomy/ biological specimen handling/ problem solving & skill development
What is your estimated start date: May 2, 2019
Estimated number of teachers who will participate in this project: 1 or more
Estimated Number of Total Students Impacted by project: 150 or more each year
Grade Levels to be Addressed: 9 th - 11 th

Program Background:

Dissection is an incredible hands-on opportunity for students to learn mammalian anatomy. Books and computer programs cannot replace this iconic high school lab experience. This year in biology we will be dissecting rats to gain a better understanding of the mammalian body plan and organ systems. I have done this lab every year that I have taught biology; I do it for the students. The experience that students gain by completing this 2-week lab experience is unparalleled by any other biology lab. Students enjoy this STEM lab; they look forward to it all year. Students learn a lot throughout the process, both about mammalian anatomy and the general process of dissection. Students remember this experience.

Project Summary:

Students are grouped according to initial comfort level. They rate themselves on a scale of 1 – 5; 1 being “I don’t want to touch it,” 3 being “I want to but I’m nervous,” and 5 being “I want to do everything!” I try not to put too many 5’s and 4’s together and not too many 1’s and 2’s together. There are 3 – 5 students per group. Some students prefer to watch more while others are more comfortable making incisions and removing organs. All students at some point are encouraged to handle the specimen. **Guests are welcome to participate anytime as well!** Just sign in at the front

office of East Ridge High School between May 8th and 17th and come experience dissection for yourself with the help of our students, they love to show off their rats and dissection skills. The students do everything in this lab experience. They are given a whole specimen in the beginning. We start with external anatomy. Students then cut into the organism and begin identifying structures within. At the end students take a practical exam where they have to identify structures on fully dissected rats.

Need (in order of necessity):

We desperately need new **chemical-splash goggles** and **rubberized aprons**, many are broken beyond repair. What is not broken is old and worn. We use these throughout the year but they are essential for safe dissection. We will also need **disposable, non-latex gloves**. Usually I ask the students to purchase these but many students are unable to afford them and we never get enough. I usually spend my own money on disposable gloves for students.

Our **dissection tools** are old and worn and we do not have enough. The students need updated dissection instruments including dissecting pans (trays that hold the specimens), scissors, probes, scalpels, tweezers, bone cutting shears, etc. We do not currently have **dissection manuals/ guides** for the students to reference during dissection, they rely completely on my instruction and the internet.

A **human torso model** or two to showcase the similarities and differences between human and rat anatomy would enhance the rat dissection experience and help students to make connections between the rat anatomy and human anatomy. Currently we rely on 2D pictures but there is no replacement for a life-sized 3D replica of the human torso, with removable organs for in-depth, detailed, and realistic study. Students will be inspired to pursue STEM careers when making these connections.

Basic preserved rats (no dye to highlight arteries and veins) are already purchased for this school year but we would like to pre-purchase higher quality **dye-injected rats** for next school year.

Project Goals and Objectives:

The goal of this project is to give students the opportunity to safely participate in a hands-on STEM lab experience. Throughout the experience students work in groups to increase their understanding of mammalian anatomy and STEM related careers.

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

The dissection culminates in a lab practical similar to what medical students experience in their education. This is a graded assignment for students. I will also distribute a survey to students to better understand their experience and how their careers paths may or may not have been affected by this lab experience.

Budget

Category of Expenditure	Dollar Amount	Related Activity
Computer Hardware	X	
Computer Software	X	
Other Equipment (not computers)	\$3,555.90	Non-consumable Dissection Materials
Competition Registration Fees	X	
Program supplies	\$1,460.60	Consumable Dissection Materials
TOTALS	\$5,016.50	

Program Approved By: Julie Robinson-Lucallen JULIE ROBINSON-LUCALLEN
Principal

Funds Payable to: East Ridge High School

Address: 13322 Excalibur Rd Clermont, FL 34711

Phone: 352-242-2080 Email: safraouis@lake.k12.fl.us

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

Signed Julie Robinson-Lucallen Date 3-1-19

Samyra Safraoui Samyra Safraoui 3-1-19

To be completed by foundation staff/board

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

Director Recommendation: _____

Executive Board Recommendation: _____

Rat Dissection Program Needs (in order of necessity)						
Item Description	Flinn Item #	Harbor Feight #	Unit Price	Quantity	Item Total	Running Total
Flinn Visor Goggles	AP1362		\$8.75	30	\$262.50	\$262.50
Apron, Rubberized, Medium-Duty, 27" W x 42" L	AP7126		\$14.34	30	\$430.20	\$692.70
Disposable Powder-Free Nitrile Gloves Small, Pkg. of 100	AP 7078		\$17.75	10	\$177.50	\$870.20
5 mil Nitrile Powder-Free Gloves 100 Pc Medium		#61363	\$7.99	40	\$319.60	\$1,189.80
5 mil Nitrile Powder-Free Gloves 100 Pc Large		#61360	\$7.99	40	\$319.60	\$1,509.40
5 mil Nitrile Powder-Free Gloves 100 Pc X-Large		#61359	\$7.99	10	\$79.90	\$1,589.30
Advanced Biology Dissecting Kit	AB1025		\$24.85	1	\$24.85	\$1,614.15
Dissection Instruments Classroom Set	FB1632		\$161.70	1	\$161.70	\$1,775.85
Dissection Instruments Sorting Tray	FB1633		\$9.85	1	\$9.85	\$1,785.70
Dissecting Pan with Flex-Pad and Cover, Standard Size	AB1072		\$18.50	40	\$740.00	\$2,525.70
Shears, Bone-Cutting, Small	AB1070		\$28.90	1	\$28.90	\$2,554.60
Photo Manual and Dissection Guide for the Rat	AB1184		\$19.40	8	\$155.20	\$2,709.80
Scissors, Mayo Type	AB1061		\$7.48	15	\$112.20	\$2,822.00
Scalpel Blades, Stainless Steel, #22, Pkg of 10	AB1057		\$3.20	10	\$32.00	\$2,854.00
Torso, 25-Part Dual Sex	FB0759		\$815.25	2	\$1,630.50	\$4,484.50
Rat, Flinn-Preferred, 7-9", Vacuum Packed, Double Injected	PM5845		\$13.30	40	\$532.00	\$5,016.50
Consumable Costs					\$1,460.60	
Non-consumable Costs					\$3,555.90	
Total					\$5,016.50	

Notes
Harbor Feight does not stock small nitrile gloves
Gloves, Scalpel blades, Rats
Everything except gloves, scalpel blades, rats

- consumables

\ non-consumables