Application: 0000000484

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Classroom Grant

Summary

ID: 0000000484
Last submitted: Apr 1 2022 02:39 PM (MDT)

Classroom Grant Application

Completed - Sep 30 2021

Classroom Grant Application

If you have any questions please call the Kellie at the STEM Action Center at 435-757-9595 or email at kellieyates@utah.gov .

*** Are you a teacher or an administrator?**

Teacher

*** Are you from a district or a charter school?**

School District

*** Please specify the name of your district:**

Cache School District

What is the name of your school or out-of-school program?

Summit Elementary

Have you been awarded a STEM Classroom Grant in the past three (3) school years?

No

Do you teach students that live in a rural community?

Yes

STEM PROJECT DETAILS

*** Which STEM subject will you integrate with your project?**

Responses Selected:

Science

Technology

Engineering

Math

*** How many students will this project impact in the current school year?**

20-30

*** Which grade(s) is this project intended for?**

5th

*** Please give a complete description of this project.**

This project is for our math enrichment group for 5th grade. At our school we have a problem with not having air conditioning. Another challenge we have is that we have bought a window air conditioner with a hose, but the window is a push-out design. The project is for the students in small groups of 5-6, will design a shelf to place the air conditioner safely by the window, slightly elevated, and able to attach it to the window easily and block the return air from coming back in as well as keeping bugs from flying in. They will write up a proposal that includes as description of how they plan to address the problem, how they would design it and a drawing of their design. They will then create a powerpoint of their plan to present to the rest of the group. Students will be able to vote on one plan. Students will get to create a cad model of their plan using a 3-D printer and acompanying technology.

*** Please include any website links that are specific to your request as a reference.**

n/a

*** How will your students benefit from this STEM activity?**

Students will work on design and engineering and work through problem solving. Students will use 5th grade math skills to find measurements and determine the supplies needed, costs involved. They will also need to convert actual measurments to model size measuments. Studnets will use seed standards for science and applying some of the cross-cutting concepts like developing a model etc. They will also explore the use of technology through the completion of a powerpoint as well as being able to see the use of a 3-D printer. A written explanation is also expected which will improve their writing and other language arts skills.

Not only that they will be able to solve a real-world problem using the skills they've learned.

*** Which Content Standard(s) does this project support?**

These standards should reference the state content standards as designated by the Utah State Board of Education. Include the actual title for each standard, such as "Math: RP 7.2.2"

5.MP.1
5.MP.2
5.MP.4
5.OA.2
5.NTF.1-7
(ETS1.A) Defining and Delimiting an Engineering Problem
(ETS1.B) Developing Possible Solutions
(ETS1.C) Optimizing the Design Solution

*** How does this project take a creative approach to extend what you normally do in the classroom?**

The students get the opportunity to design their project from the beginning and will have access to different materials to solve the problem. They will design every aspect of the project thinking of supplies needed, what materials would work best. This really is allowing them many options to see what it would be like to do something like this in the real world. This is a much more hands on option and students will be able to see their project take shape.

*** How is this project sustainable over several years?**

With minimal replacement of filaments for the 3-D printer students would be able to continually recreate this project from year to year.

*** What additional funding support are you receiving to be able to implement this program?**

Legislative funds for more of the consumable supplies.

*** How will you measure the outcomes of this project related to student learning? Please be specific in your measurement tools, which should include more than summative assessment(s).**

Students will be able to show proficiency in their weekly GoMath chapter tests as well as completing a series of workbook pages that will indicate proper mathematics and completion of the thought processes involved. Students will also provide a powerpoint presentation of their plan to discuss with the class. A workbook of their model as well as a written write up of how they plan to address specific problems will be completed.

*** Please outline the schedule for this project, including planning and prep.**

October
Wk 1- Project introduction and brainstorming
Groups created, rough drafts drawn, problems addressed and ideas considered in groups
Wk 2-3 Gathering data/information and plan formulation
Take measurements, explore different materials and options, find pricing and availability.
Wk 4 - Creation of plan
Drawings created and measurements addressed, models showing function and plan
Wk 5 - Create Presentations
Presentation to the class created via powerpoint to show how problems are addressed.
Wk 6 - Presentations
Students will evaluate different proposals and vote on one
Wk 7 - Build
Students will help build how they can the project they voted on and created with the 3D-Printer.

PROJECT BUDGET INFORMATION

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Enter information about your project budget. Please include ALL expenses, including shipping and handling. We are unable to pay for sales tax with these grant dollars. DO NOT INCLUDE ESTIMATIONS. Awards are based on the exact cost of the project. Amount of funding cannot be increased once awarded. NOTE: STEM AC RESERVES THE RIGHT TO FUND YOUR REQUEST AT A LOWER AMOUNT. THe MAXIMUM request amount is $1500.00

	Item name	Cost
	Stacking shelf - Chrome (2)	57.88
	Creality Ender 3 Pro 3D Printer with Removable Build Surface Plate and UL Certified Meanwell Power Supply Printing	236.00
	Comgrow 3D Printer PLA Filament Black	24.99
	3D Printer PLA Filament 1.75mm 1KG Spool White	19.99
	3D Printer Filament Dryer Box, Comgrow 3D Filament Storages, Keeping Filaments Dry During 3D Printing, Compatible with 1.75mm, 2.85mm PLA PETG ABS Material, Filament Dehydrator, Spool Holder	60.99
	Safco Products Deskside Wire Machine Stand 5207BL, Holds up to 200 lbs.,Black	86.77
	LOVIMAG Super Strong Neodymium Disc Magnets, Powerful Rare Earth Magnets - 1.26 inch x 1/8 inch, Pack of 20	24.99
	NBZXSYMAG Powerful Neodymium Bar Magnets,Strong Permanent Rare Earth Magnets for Fridge, DIY, Building, Scientific, Craft, and Office Magnets - 60 x 10 x 3 mm, Pack of 24	20.99

Total		532.59

**** The STEM Action Center office reserves the right to award funds equal to or less than the applicant's request. If awarded, recipients will need to sign a contract agreeing to all reporting requirements, which include submitting receipts, photo or video documentation of the funded learning experience, and a short project completion report (template provided).**

APPLICATION AGREEMENT DETAILS:

The signatures below indicate the agreement between the STEM Action Center and School or District to engage in all the terms and conditions described in the application. All parties believe that the responsibilities and efforts as described previously reflect reasonable judgments as to what will be involved in efficient and effective conduct of the research. By signing this application, applicant ensures all information is complete and accurate.

The application will be considered incomplete until all signatures are received.

*** APPLICANT SIGNATURE:**

*** School, Program or LEA ADMINISTRATOR SIGNATURE:**

Please check with your school leadership to determine whose signature you need. Several districts, including (but not limited to) Jordan District, need to provide district level acknowledgement of grant applications.